

Bulletin of the Museum of Comparative Zoology

HARVARD UNIVERSITY

VOL. 130, No. 4

A REVISION OF THE GENUS APENESIA IN THE
AMERICAS (HYMENOPTERA, BETHYLIDAE)

By HOWARD E. EVANS

With Ten Plates

CAMBRIDGE, MASS., U.S.A.

PRINTED FOR THE MUSEUM

DECEMBER, 1963

No. 4 — *A Revision of the Genus Apenesia in the Americas*
(Hymenoptera, Bethyilidae)¹

By HOWARD E. EVANS

INTRODUCTION

Recent studies of the *Pristocerini* of North and Central America have resulted in preliminary revisions of the genera *Dissomphalus*, *Pseudisobrachium*, and *Pristocera* (Evans, 1955, 1961, 1963). After sorting out members of these genera from the *Pristocerini*, one is still left with an assortment of forms showing a considerable array of characteristics although difficult to sort into clear-cut genera. I have treated a few of the species under the name *Propristocera* (Evans, 1958), pointing out that these forms appear to occupy a central position in the *Pristocerini*, showing close affinities to the other genera and possibly containing the roots of the phylogenetic lines leading to each of the other three genera. Further study reveals that this group is vastly larger than I had previously supposed, with Kieffer's genera *Cleistepyris* and *Dipristocera* being essentially inseparable from *Propristocera*. These three generic names have all been applied to the male sex only. The females of *Dissomphalus*, *Pristocera*, and *Pseudisobrachium* are well known, and the residue of female *Pristocerini* have been placed in Westwood's genus *Apenesia*, known from the female sex only. *Apenesia*, too, exhibits a fairly broad spectrum of characters and also seems to occupy a central position among the genera of *Pristocerini*. I am convinced that *Apenesia* represents the female sex of *Propristocera* (including also *Cleistepyris* and *Dipristocera*), and since *Apenesia* is much older it is the name which must be used for this complex. In this paper, then, the name *Apenesia* is used in this broad sense, to apply to a rather large, heterogeneous, and protean complex of species, most of which are known from the male sex only. It is possible that some of Kieffer's names can eventually be employed as subgeneric names, but at the present state of our knowledge this does not seem feasible.

¹ This research was supported by a grant from the National Science Foundation, no. GB-1544. Acknowledgement is also made to the Permanent Science Fund of the American Academy of Arts and Sciences, a grant from which in 1961 made it possible for the author to travel to London to study type specimens in the British Museum (Natural History).

Evidence that this association of sexes is correct may be summarized as follows. The females of *Apencsia* bear much resemblance to those of *Pristocera*, but the propodeum is less strongly constricted, sometimes hardly constricted at all, almost as in *Dissomphalus*; a few species have the abdomen petiolate as in *Dissomphalus*. The eyes are generally smaller than in *Pristocera*, and at least one species has the eyes reduced to a single facet each, a condition characteristic of *Pseudisobrachium*. The males also share some of the characters of each of these genera, and certain males approach these genera very closely indeed. Thus it is morphologically logical that *Apencsia* and *Propristocera* are opposite sexes of one genus.

Evidence of another type is to be found in the coincidence of ranges. Both *Apencsia* and *Propristocera* are distributed throughout the warmer parts of the globe, including the Australian region, which otherwise lacks *Pristocerini*. In the eastern United States (exclusive of Florida), there is but one species of *Propristocera* and one (previously undescribed) species of *Apencsia*; the two forms are similar in size, and it is logical to conclude that they represent male and female of one species. More conclusive evidence is provided by a reared series of an undescribed species of *Apencsia* from the Bismarck Archipelago in the British Museum (Natural History). This series consists of six females and two males reared from the larvae of *Pantorhytes plutus* Oberthür (Curculionidae) at Kerawak, New Britain, October 1946 (B.A. O'Connor collector). Although the males belong to a species-group not present in the Americas, the females are very similar to those of several American species, including *amazonica*, type of the genus.

There is a second record of these wasps attacking the larvae of weevils. Kieffer (1914) presents a record of *Apencsia parasitica* (Smith) having been reared from *Epiphylax quadricollis* (Fairmaire) (Curculionidae) in Madagascar. The species of *Epiphylax* are said to mine the inner bark of lianas, while *Pantorhytes plutus* is a root-borer. The structure of female *Apencsia* suggests that these wasps spend most of their lives in the soil or in wood, and there are other records to indicate that this is the normal habitat. I have examined three female *A. chontalica* (Westwood) labeled as having been taken "in decayed log," and two female *A. amoena* n. sp. labeled "under loose bark of recently cut down tree." *A. parapolita* (new name for *polita* Evans, preoccupied) has been taken in logs and under bark on several occasions, also

"in sweet gum tree crotch," "in debris in hollow sycamore," and "with *Ponera contracta*" (? = *coarctata pennsylvanica* Buckley). The latter is the only record of these insects being associated with ants, and I suspect the association was accidental.

Males of this genus are fully winged and mostly dark in color. Most species fly in the daytime although a few are known to be nocturnal, like many species of *Pseudisobrachium*. The diurnal species are most commonly taken in sweepings from grass, herbs, or the leaves of trees. I have taken a few males at honeydew, but they are much less frequently taken at honeydew than are some of the Epyrini.

ACKNOWLEDGMENTS AND SOURCES OF MATERIAL

Specimens of this genus are uncommon in collections, and I have had to borrow material from many sources. The list below is meant to serve as an acknowledgment to each institution and individual supplying material, as well as an indication of the abbreviation by which each is designated in the text. My own collecting in Mexico and southwestern United States in 1959, when I held a fellowship from the John Simon Guggenheim Memorial Foundation, has been an important source of material. A collection from Barro Colorado Island, Panama, taken by Carl W. and Marian E. Rettenmeyer, has also been extremely valuable. Dr. G. Steinbach, of the Zoologisches Museum der Humboldt-Universität zu Berlin, sent me several Kieffer types for study. Dr. R. L. Doutt, of the University of California at Albany, also sent me several Kieffer types from Pomona College which are currently in his custody. Dr. M. J. Viana, of the Museo Argentino de Ciencias Naturales, Buenos Aires, loaned me the type of *Propristocera boliviensis* Ogloblin. With the assistance of these persons, and with the aid of a grant to study types in England, acknowledged earlier, I have been able to examine the types of all the described American species of this genus.

American Museum of Natural History, New York (AMNH)

British Museum (Natural History), London (BMNH)

California Academy of Sciences, San Francisco (CAS)

California Dept. of Agriculture, Sacramento (CDAS)

California Insect Survey, Berkeley (CIS)

Canadian National Collections, Ottawa (CNC)

Carnegie Museum, Pittsburgh (CM)

Cornell University, Ithaca, N. Y. (CU)

H. K. Townes Collection, Ann Arbor, Mich. (HKT)
Hope Collection, Oxford University, England (HCOU)
Illinois Natural History Survey, Urbana (INHS)
Kansas University, Lawrence (KU)
Museum of Comparative Zoology, Cambridge, Mass. (MCZ)
University of Arizona, Tucson (UA)
University of California, Davis (UCD)
United States National Museum, Washington, D.C. (USNM)

TERMINOLOGY

As is usual in the *Pristocerini*, sexual dimorphism is so pronounced in this genus that it is convenient to treat the sexes separately both here and in the main body of the text.

Males

Size. — Although total body length is presented for each type specimen, these figures are no more than approximations, as disposition of body parts and telescoping of abdominal segments introduce large errors of measurement. A much more accurately measurable indication of size is length of the fore wing (LFW).

Mandibles. — The mandibular teeth are numbered beginning with the apical, outermost tooth and proceeding toward the inner margin.

Antennae. — Rather than present measurements of all thirteen antennal segments, I have measured the relative length of the first four segments, and the length/maximum width of segments three and eleven. The length of the antennal pubescence is measured (except as otherwise noted) at segment eleven, where the length of the longest setulae is compared with the greatest width of the segment.

Eyes. — In this genus, it is to be assumed that the eyes are bare (or with exceedingly small setae) unless noted otherwise. Height of the eye (HE) is the maximum height as measured in lateral view.

Ocelli. — It is to be assumed that the ocelli are not enlarged unless otherwise noted; where enlargement occurs, the diameter of the anterior ocellus (DAO) is compared to the minimum width of the front (WF). Width of the ocellar triangle (WOT) includes the hind ocelli; the ocello-ocular line (OOL) is simply the distance from the margin of one lateral ocellus to the nearest eye margin. The front angle of the ocellar triangle is measured on the outer sides of the ocelli.

Head dimensions. — Width of the head (WH) is measured at its maximum point, including eyes, in full front view. Length of the head (LH) is measured from the median apical margin of the clypeus to the midpoint of the vertex, also in full frontal view. Width of the front (WF) is the minimum width measurable, often toward the bottoms of the eyes. Distance from eye tops to vertex crest, as compared to HE, is no more than a rough approximation, because of the difficulty in making this measurement (made in lateral view at the same time that HE is measured).

Pronotum. — The dorsal surface, called the pronotal disc, is connected by a sloping anterior face to the flat, anterior collar. Most discussions, and all drawings, pertain only to the disc.

Propodeum. — The term propodeal disc is used for the dorsal surface. Width of the disc is measured at its widest point; length is measured along the midline as far as the transverse carina (or the crest of the declivity, when this carina is absent). A basal, triangular portion of the disc which is often more heavily sculptured than the remainder is termed simply the basal triangle. The disc is margined on each side by lateral carinae, and there may be another pair of longitudinal carinae just mesad of the laterals, called the sublateral carinae. The term transverse carina refers to the carina margining the disc behind. The posterior face (or declivity) is the oblique portion facing the first abdominal tergite, while the side pieces are lateral and more or less vertical.

Mesopleurum. — The term mesopleural callus is applied to a convexity situated on the upper posterior part, often subtended by a groove.

Wing venation. — The discoidal vein (often weakly developed, sometimes absent) is more or less continuous with the median vein, the subdiscoidal vein more or less continuous with the anal vein; the cell between the two, closed on the inner side by the transverse median vein and on the outer side by a deflection of the discoidal vein, is called the discoidal cell. In the modified Comstock-Needham system (Michener, 1944), the median vein is $M + Cu$, the discoidal vein the outer part of Cu , the subdiscoidal vein plus the anal vein constitute the vannal vein, and the discoidal cell is 2nd Cu .

Abdomen. — The term abdomen is here used to mean the gaster or metasoma (true abdomen minus the propodeum). The abdomen is said to be petiolate if the first tergite does not attain the extreme base of the first segment (as in Figs. 43, 44, 81, 82).

It is said to be sessile if the first tergite reaches the base, even if the segment is slender basally (Figs. 22, 23, 79, 80).

Genitalia.—The lateral, apical structures, termed the parameres, show excellent specific differences and are figured for most species. The volsellae consist of a median cuspis which articulates with the rest of the volsella and is directed laterad, and a more lateral digitus, which in this genus is usually divided into two parts, called the ventral and dorsal arms (shown in lateral view in Figs. 2-7). The ventral arms of the digiti are setose and in some species-groups are strongly separated from the dorsal arms. The aedoeagus is complex, terminating in one to several pairs of apical lobes.

Females

Size.—Total length is difficult to measure accurately as in the males. More significant indications of size are length of the head (LH), and length of the thorax (LT), the latter measured from the anterior margin of the pronotal disc (not including the collar) to the posterior end of the propodeum.

Head shape.—Length of the head (LH) is measured as in the male and is compared to the width of the head (WH), measured at the midpoint of LH.

Pronotum.—Length of the pronotal disc is measured along the midline (excluding collar as usual); width is measured at its greatest, across the prominent shoulder-like posterior corners.

Propodeum.—The propodeum is constricted at or near the spiracles; the width of the constriction (= minimum width) is measured in full dorsal view, as are the width of the portion anterior to the spiracles and the width of the portion behind the spiracles (= maximum width in all but one species). These three measurements presented together constitute the propodeal formula (e.g., 27:16:30 means that the anterior expansion, the constriction, and the posterior expansion present these relative measurements). Length of the propodeum is measured from its extreme anterior end to its extreme posterior end; this figure is slightly greater than the median length, since the anterior margin is concave, embracing the posterior point of the subtriangular mesonotum.

Genus APENESIA Westwood

Apenesia Westwood, 1874, Thesaurus Ent. Oxoniensis, p. 170. [Type species *A. amazonica* Westwood (♀, Brazil); designated by Westwood, 1881.]

— Westwood, 1881, Trans. R. Ent. Soc. London, 1881, p. 130. — Kieffer,

- 1905, in André, Spec. Hymen. Eur. Alger., 9: 255. — Kieffer, 1914, Das Tierreich, 41: 391-396.
- Aeluroides* Tullgren, 1904, Ark. Zool., 1: 428-430. [Type species *A. sjöstedti* Tullgren (♀, Africa); monobasic]. Synonymy by Kieffer, 1914.
- Propristocera* Kieffer, 1905, in André, Spec. Hymen. Eur. Alger., 9: 247. [Type species *P. interrupta* Kieffer (♂, Ceylon); designated by Kieffer, 1914]. — Kieffer, 1914, Das Tierreich, 41: 484-488. — Benoit, 1957, Explor. Parc Nat. Albert, Mission DeWitte, fasc. 88, pp. 37-42. — Evans, 1958, Proc. Ent. Soc. Wash., 59: 289-296. New synonymy.
- Cleistopyris* Kieffer, 1910, Ann. Soc. Ent. France, 79: 48. [Type species *C. punctatus* Kieffer 1910 (♂, Peru) (*nec Apenesia punctata* Kieffer 1904; = *A. peruana* n. name); designated by Kieffer, 1914]. — Kieffer, 1914, Das Tierreich, 41: 490-494. New synonymy.
- Dipristocera* Kieffer, 1914, Das Tierreich, 41: 471-472. [Type species *Pristocera microchela* Kieffer (♂, Mexico); monobasic]. New synonymy.
- Misepyrus* Fouts, 1930, Philippine Jour. Sci., 41: 1-10 [*Nec* Kieffer 1913; misidentification].
- Neopristocera* Benoit, 1957, Explor. Parc Nat. Albert, Mission DeWitte, fasc. 88, pp. 44-46. [Type species *N. triloba* Benoit (♂, Africa); original designation]. Preoccupied by Yasumatsu, 1955, Jour. Fac. Agri. Kyushu Univ., 10: 248. New synonymy.
- Generic characters.* — *Male.* Mandibles usually with five teeth, occasionally with three or four, in one species-group the basal four teeth fused to form a single cutting edge, leaving only the apical tooth dentiform. Clypeus with a median lobe of very variable shape, but never trapezoidal and narrowly truncate as in *Pseudisobrachium*. Eyes glabrous except in a few species, where there are sparse, short setae. Antennae usually with the pubescence erect or suberect, bristling, and relatively long, but in a few species the pubescence is short and subappressed, these species having some erect setae standing out above the pubescence. Occipital carina complete. Pronotum of variable structure, with or without a transverse groove near posterior margin, only rarely with transverse rugae. Scutellum with a transverse groove at base. Propodeum with basal triangle not marked off by a groove or carina, though usually more heavily sculptured than rest of propodeal disc; disc with or without a transverse margining carina behind. Claws with a single, short, erect tooth in addition to the apical ray. Fore wing with costa extending well past stigma as a strong vein (a few exceptions); discoidal cell partially or fully outlined in most species. Genitalia with parameres simple, sometimes with two apical processes but never deeply divided; digits divided into ventral and dorsal arms (except in one species-group); inner margin of volsella without a vannus;

aedoeagus complex, without three distinct sets of valves as in *Pristocera*.

Female. Mandibles with from two to four teeth. Clypeus of variable structure. Eyes small, each with from one to about 14 facets. Ocelli absent. Antennae short, flagellar segments not much if any longer than thick, flagellum incrassate in some species. Wings and tegulae completely absent. Mesonotum subtriangular, rounded behind, anterior margin of propodeum slightly extended along sides of mesonotum and arcuately embracing its posterior third. Propodeum weakly to moderately constricted near the spiracles, maximum width from 1.2 to 1.9 X minimum width, sides of propodeum behind the constriction either straight (Fig. 136) or arched (Fig. 134). Mesopleurum with a conspicuous dorsal surface, the thorax much wider here than elsewhere. Femora slightly to strongly swollen and flattened; middle tibiae strongly spinose in most species. Abdomen elongate, with a short to fairly long petiole in some species.

Remarks.—The type species of Kieffer's genera *Cleistopyris* and *Dipristocera* are typical members of this genus and are treated in their proper place in the text (both belong to the *brasiliensis* species-group). The type species of *Dipristocera* does not have paired pits on the scutellum as Kieffer indicated. The type species of *Cleistopyris* does have a transverse carina on the propodeum, as described by Kieffer, but this character is not of generic value in the *Pristocerini*.

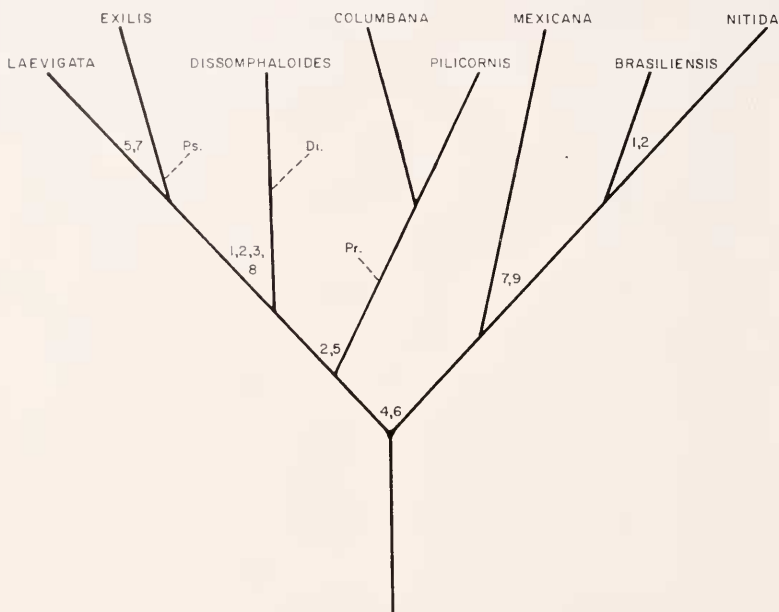
The type species of *Propristocera* is unknown to me, but I have seen several Oriental species which are apparently closely related to it. These species have unidentate mandibles very similar to those of the *nitida* species-group of South America, but they are otherwise not especially close to members of that group. *Apenesia* is represented by an abundance of species in the Orient, Africa, and Australia, and it will eventually be necessary to recognize several additional species-groups to accommodate all of these species.

In the Americas, *Apenesia* is represented by 63 known species, which collectively range from New York, Illinois, Arizona, and southern California to Bolivia and northern Argentina, including the West Indies. Fifty-three of these species are known from males only, 9 from females only, and a single species from both sexes (and even this association has yet to be proved). The males fall into eight well-defined species-groups. The females show considerable structural diversity, but it is difficult to know to what species-groups (as defined in the male sex) the different

TABLE 1. CHARACTERS OF THE EIGHT SPECIES-GROUPS OF APENESIA (MALES)

Characters	1	2	3	4	5	6	7	8	9	10
	No. of teeth on mandibles	Shape of clypeus	Eyes weakly hairy	Transverse carina pronotum	Transverse carina propodeum	Middle tibiae spinose	Abdomen petiolate	Digitus w/setose ventral arm	Volsetia w/setose inner margin	Paramere with mesal lobe
<i>Species-groups</i>										
<i>pilicornis</i>	4-5	truncate	—	—	+	—	—	+	—	—
<i>columbana</i>	4-5	truncate	—	—	+	—	—	+	—	+ or —
<i>exilis</i>	5	angulate	—	—	—	—	—	+	—	+ or —
<i>disomphaloides</i>	3-4	tridentate	+	—	—	—	—	—	—	—
<i>laevigata</i>	5	rounded or angulate	—	—	weakly on sides	—	+	+	—	—
<i>mexicana</i>	3-5	rounded or angulate	— (rarely +)	+	+	+	—	+	—	+
<i>brasiliensis</i>	5	truncate or angulate	—	+	+	+	+	+	+	+
<i>nitida</i>	1	angulate or bidentate	—	+	+	+	+	+	+	+

structural types correspond. In the text, I have first treated the eight male species-groups, then treated all the females together at the end. The more important characters of the species-groups of males are summarized in Table I, and the probable relationships of these groups are indicated in Text-figure 1.



Text-figure 1. Diagram showing probable relationships of the eight species-groups of male *Apenesia*. At each branching of the tree I have indicated the important characters which diverge at that point (see Table I for listing of characters by number). I have also indicated the point at which the other three genera of *Pristocerini* may have arisen from this complex: Pr. = *Pristocera*; Di. = *Dissomphalus*; Ps. = *Pseudisobrachium*. Groups toward the center are assumed to be relatively generalized, those at the extreme right and left to be specialized.

KEY TO SPECIES OF APENESIA

Males

1. Pronotal disc without a transverse carina anteriorly 2
- Pronotal disc with a distinct transverse carina anteriorly 25
2. Abdomen sessile (Figs. 22, 23, 36) 3
- Abdomen with a distinct, moderately long petiole (Figs. 43, 44)
 (*laevigata* species-group) 23

3. Propodeal disc with a transverse carina behind; relatively large species (LFW at least 3.3 mm.) 4
- Propodeal disc without a transverse carina behind; very small species (LFW under 3 mm.) 18
4. Antennae with erect setae on the under side which stand out strongly above the short pubescence (most noticeable on segments 4-7); pronotal disc elongate and with the sides (seen from above) slightly concave (Fig. 15) (*pilicornis* species-group) 5
- Antennae with erect setae sparse and standing out slightly if at all above the prominent, bristling pubescence; sides of pronotum not concave (Figs. 51-53) (*columbana* species-group) 12
5. Transverse carina of propodeum strong, complete; median carina of propodeum reaching the transverse carina, though sometimes weaker behind or represented by a groove or series of small foveae 6
- Transverse carina of propodeum obsolete medially, median carina present only on basal two-thirds of disc, not nearly reaching transverse carina 10
6. Propodeal disc slightly longer than wide; clypeus weakly rounded apically, with a small median angulation (Fig. 14) (Brazil). 5. *elongata* n. sp.
- Propodeal disc slightly wider than long; clypeus more distinctly truncate apically, also usually with a small median tooth (Fig. 13) 7
7. Pronotum with punctures absent along a fairly wide median strip; ventral arm of digitus very short (Fig. 3) (Bolivia) 4. *angusticeps* n. sp.
- Pronotum more strongly punctate, punctures distributed over most of surface except sometimes a narrow median strip; ventral arm of digitus elongate (Figs. 2, 4, 5) 8
8. All trochanters pale straw-colored, contrasting with other basal parts of legs; abdomen weakly suffused with yellowish-brown on apical segment (Brazil) 3. *tenebrosa* n. sp.
- Trochanters at least in part brownish or black, not strongly contrasting with remainder of legs; apical two or more segments of abdomen bright rufo-castaneous 9
9. Eyes large, WF 1.0-1.2 X HE; scape pale castaneous like the flagellum; LFW under 4.5 mm. (Southern Mexico to Panama and Venezuela) 1. *pilicornis* n. sp.
- Eyes small, WF much exceeding HE (1.40-1.52 X HE); scape brownish or blackish; LFW 5.5-6.7 mm. (Brazil) 2. *ornata* n. sp.
10. Mandibles with fourth tooth so small as to be scarcely noticeable (Fig. 11); scape blackish; antennal segment eleven 3 X as long as thick (Brazil) 6. *reducta* n. sp.
- Mandibles obviously five-toothed (as in Figs. 8, 10); scape castaneous, sometimes suffused with brownish; antennal segment eleven 2.4-2.7 X as long as thick (Central America) 11
11. Clypeal carina low, nearly straight in profile; ocelli slightly enlarged, DAO .21 X WF; basal triangle of propodeum reticulate; abdomen

- weakly suffused with brownish apically (Mexico) 8. *punctata* (Cameron)
- Clypeal carina strong, in profile abruptly declivous to apex; ocelli smaller, DAO .16 X WF; basal triangle of propodeum filled with slightly radiating longitudinal carinae; apical two segments of abdomen suffused with orange-brown (Guatemala, El Salvador) 7. *guatemalensis* n. sp.
12. Pronotum either with a strong transverse groove just before the posterior margin, or the whole margin depressed so that there is a constriction between the pro- and mesonota; parameres of genitalia with an angulate process on their outer side (Figs. 16-18) 13
- Pronotum with at most a vague indication of a transverse impression, pro- and mesonota forming nearly a smooth plane; parameres slender, not produced on outer side; inner margin of volsella with a finger-like process (Figs. 19-21) 15
13. Propodeal disc in large part smooth and shining, without transverse striae; pronotum short (Fig. 51), convex, impressed along its posterior margin; inner margin of volsella angularly produced (Fig. 16) (Colombia, Panama) 9. *columbana* (Westwood)
- Propodeal disc in large part covered with transverse striae; pronotal disc longer (Fig. 52), with a transverse groove just before the posterior margin; inner margin of volsella simple (Figs. 17, 18) 14
14. Pronotum smooth except for transverse groove; clypeus narrowly truncate apically, its margin not triangular as seen from below (Fig. 41); apex of parameres and volsella as in Figure 17 (Panama) 10. *sulcata* n. sp.
- Pronotal disc finely transversely striate anteriorly; clypeus more strongly truncate apically, its margin broadly triangular as seen from below (Fig. 40); apex of parameres and volsella as in Figure 18 (Brazil) 11. *striatula* n. sp.
15. Mandibles and antennae dark brown or nearly black; propodeal disc smooth and polished (except basal triangle), median carina continuous to transverse carina (Brazil) 12. *funbris* n. sp.
- Mandibles in large part straw-colored; antennae light castaneous or somewhat rufous; median carina of propodeum obsolescent behind, or if complete then the disc somewhat striate on sides and behind 16
16. Ocelli greatly enlarged, DAO more than .25 X WF, lateral ocelli only 1.25 X their own diameters from eye margin; abdomen in large part rufous; propodeal disc about as long as wide (Argentina) 15. *photophila* (Ogloblin)
- Ocelli at most slightly enlarged, DAO less than .25 X WF, OOL at least as great as WOT, much greater than diameter of ocelli; abdomen mostly blackish; propodeal disc wider than long 17
17. Mandibles with only four strong teeth (as figured for *columbana*, Fig. 24); antennae relatively shorter and with short pubescence (segment eleven 2.7 X as long as thick, its setulae about one-third as long as width of segment); tegulae and legs fuscous (Bolivia)

-13. *flammicornis* n. sp.
Mandibles with five strong teeth (as figured for *funebis*, Fig. 25); antennae elongate, the pubescence long, bristling (segment eleven 3.8 X as long as thick, its setulae nearly as long as width of segment); tegulae and legs (except front coxae) testaceous (Brazil)
.....14. *pallidicornis* n. sp.
18. Clypeus angulate apically (Figs. 34, 35); eyes glabrous; digiti with a setose ventral arm as usual in the genus, aedoeagus without prominent, slender ventral rami (Figs. 26-29) (*exilis* species-group) 19
Clypeus tridentate apically (Fig. 42); eyes with short hairs; digiti in the form of simple, curved rods, without a setose ventral arm; aedoeagus broad and with prominent, very slender ventral rami (Fig. 37) (*dissomphaloides* species-group) 22
19. Head and thorax strongly polished, non-alutaceous; notauli in the form of fairly wide grooves; parameres much broadened apically (Fig. 26) (Arizona) 16. *pima* n. sp.
Head and thorax rather uniformly alutaceous, less strongly shining than above; notauli linear or obsolescent; parameres slender apically (Figs. 27-29) 20
20. Notauli distinct, linear; front considerably wider than eye height (WF 1.2 X HE); OOL greater than WOT; antennae and legs dark, nearly black (Arizona) 19. *cochise* n. sp.
Notauli barely evident; front narrow (WF subequal to or less than HE); OOL equal to or less than WOT 21
21. Propodeum elongate, about 1.5 X as long as wide; wing veins light brown; basal parts of legs dark brown (Florida) 18. *martini* n. sp.
Propodeum shorter, about 1.25 X as long as wide; wing veins nearly colorless, legs light brown to straw-colored (Arizona, California) 17. *exilis* n. sp.
22. Mandibles with three teeth (Fig. 48); antennae uniformly light brown, third segment longer than second; OOL subequal to WOT; ocelli slightly enlarged, front angle of ocellar triangle approximately a right angle (Arizona) 20. *dissomphaloides* n. sp.
Mandibles with four teeth (Fig. 49); antennae with the basal two segments much paler than the remainder, third segment shorter than second; OOL much greater than POL; ocelli small, front angle of ocellar triangle less than a right angle (Mexico) 21. *denticulata* n. name
23. Discoidal vein arising well down on transverse median vein; head with prominent, bulging eyes, WH 1.07 X LH; spiracles on first two abdominal tergites rather large (Fig. 44); parameres very long and slender (Mexico) 24. *laevigata* (Evans)
Discoidal vein absent or interstitial with median vein; head with less bulging eyes, higher than wide, WH .90-.97 X LH; spiracles of first two tergites not notably enlarged 24

24. Propodeum with a strong median carina, posterior part of disc shining; WF 1.17 X HE; LFW 2.1 mm. (Arizona) 22. *pallidula* n. sp.
 Propodeum without a well-defined median carina, disc weakly and irregularly striate behind; WF 0.9 X HE; LFW 2.4 mm. (Brazil) 23. *crenulata* (Kieffer)
25. Mandibles with from three to five teeth (Figs. 68-75, 112-116); abdomen sessile or petiolate; subgenital plate and genitalia not as described below 26
 Mandibles with only the apical tooth distinct, the remaining teeth fused to form a single cutting edge (Fig. 117); abdomen petiolate; subgenital plate very broadly arcuately emarginate (Fig. 126), revealing the greatly expanded apical lobes of the parameres (Fig. 120); aedoeagus of characteristic form (Figs. 120-123) (*nitida* species-group) 50
26. Abdomen sessile, though sometimes rather slender basally (Figs. 79, 80); mandibles with from three to five teeth; inner margin of volsella at most with a few setae just below the cuspis (Figs. 56-59, 63-67, 76-78) (*mexicana* species-group) 27
 Abdomen petiolate, the petiole very short in some species, but the first tergite never reaching the extreme base of the segment (Figs. 81, 82); mandibles with five teeth; inner margin of volsella strongly setose for a considerable distance (Figs. 92-95, 105, 106) (*brasiliensis* species-group) 38
27. Mandibles with five teeth (Figs. 68, 69) 28
 Mandibles with three or four teeth (Figs. 70-75) 31
28. Pronotum with a strong transverse groove just before posterior margin; head and thorax strongly shining, non-alutaceous; clypeus more or less rounded apically (Fig. 83) (Panama and Costa Rica) 25. *bugabensis* (Cameron)
 Pronotum with transverse groove absent or vaguely indicated; head and thorax moderately shining, alutaceous; clypeus angulate apically (Fig. 84) 29
29. Eyes with minute, scarcely noticeable setae; discoidal vein very weak, interstitial with median vein; genitalia with inner margin of volsella strongly spined at base of cuspis, striate below (Fig. 59) (Central Mexico) 28. *malinche* n. sp.
 Eyes with short hairs; discoidal vein arising a short distance down on transverse median vein, weak to fairly strong; genitalia with volsellae at most weakly spined at base of cuspis, weakly striate below . . . 30
30. Antennae rufo-castaneous, scape and apical part of flagellum infuscated to a variable extent, pubescence dense, pale; subgenital plate rounded apically (Fig. 61); parameres slender, aedoeagus of characteristic form (Fig. 58) (California and Baja California) 27. *mohave* n. sp.
 Antennae brownish, basal flagellar segments usually somewhat lighter, pubescence tending to be coarser and less dense; subgenital plate of most specimens distinctly emarginate (Fig. 60); parameres broad apically, aedoeagus of characteristic form (Fig. 57) (Arizona to

- Central Mexico) 26. *chiricahua* n. sp.
31. Mandibles with four clearly defined teeth (Figs. 70-72) 32
- Mandibles with three teeth (Figs. 74, 75) or in one species actually four-toothed, but the third tooth reduced to a barely visible knob between the basal two teeth (Fig. 73) 34
32. Flagellum with pubescence subappressed and with erect setae which stand out far above pubescence; front and thoracic dorsum polished, non-alutaceous, with strong punctures (Panama) 29. *peculiaris* n. sp.
- Flagellum with erect, bristling pubescence and without erect setae which stand above the pubescence; front and thoracic dorsum uniformly though sometimes weakly alutaceous, punctures of these areas relatively very weak 33
33. Clypeus denticulate apically, but without a median tooth (Fig. 86); coxae and femora light brown; front and thoracic dorsum weakly alutaceous; propodeal disc slightly longer than broad (Bolivia) 30. *pando* n. name
- Clypeus with a small median tooth, margin also weakly crenulate (Fig. 87); legs wholly bright straw-yellow; front and thoracic dorsum moderately alutaceous; propodeal disc slightly broader than long (Cuba) 31. *cubensis* n. sp.
34. Clypeus short, weakly bidentate on the midline apically, median area somewhat elevated but not carinate (Fig. 91); median line of pronotum weakly elevated; parameres subquadrate apically (Fig. 77) (Peru, Ecuador) 36. *inca* n. sp.
- Clypeus not bidentate, with a more or less distinct small to fairly large median tooth (Figs. 88-90); pronotum without a median elevation; parameres not of this form 35
35. Propodeal disc nearly square, actually very slightly wider than long, posterolateral portions moderately alutaceous, moderately shining; clypeus with a strong median tooth (Fig. 90), median line not carinate; aedocagus broad and with a complex series of slender, serrate apical processes (Fig. 76) (Brazil, Peru) ... 35. *neotropica* n. name
- Propodeal disc distinctly broader than long (width 1.2-1.35 X median length), posterolateral portions obscurely alutaceous, polished; clypeus with a weak to moderately strong median tooth, median line more or less carinate (Figs. 88, 89); aedocagus not as above 36
36. Clypeus subtruncate apically and with a minute median tooth (Fig. 88); ocelli slightly enlarged, DAO about .25 X WF; OOL slightly less than WOT (Panama) 33. *testaceipes* (Cameron)
- Clypeus obtusely angulate apically (Fig. 89); ocelli not notably enlarged, DAO less than .20 X WF; OOL somewhat exceeding WOT 37
37. Flagellar pubescence very short, longest setulae of antennal segment eleven about .3 as long as width of segment; mandibles actually with four teeth, but third tooth minute, sometimes difficult to see if mandibles are worn (Fig. 73) (Mexico) 32. *mexicana* (Cameron)

- Flagellar pubescence more coarse, longest setulae of antennal segment eleven about half as long as width of segment; mandibles with only three teeth (Fig. 74) (Guatemala) 34. *maya* n. sp.
38. Median lobe of clypeus roundly or somewhat angularly produced, extending well beyond lateral lobes (Figs. 96-102) 39
 Median lobe of clypeus broadly truncate, extending only slightly beyond lateral lobes (Figs. 103, 104) 45
39. Prothorax entirely rufo-castaneous, in contrast to head and to remainder of thorax; ocelli slightly enlarged (DAO .20 X WF); OOL 1.13 X WOT (Brazil) 43. *fulvicollis* (Westwood)
 Prothorax brownish-fuscous or black like head and remainder of thorax 40
40. Median lobe of clypeus narrow, prominent (Fig. 96); surface of propodeum wholly roughened by reticulate ridges; parameres slender throughout, their apices deflected mesad (eastern United States) 37. *parapolita* n. name
 Median lobe of clypeus short and broad (Figs. 97-101); posterolateral parts of propodeal disc often alutaceous, but not covered with reticulate ridges; parameres expanded apically 41
41. Head and thorax uniformly alutaceous, moderately shining; head slightly wider than high; parameres with an angular lateral lobe and slender median lobe (Fig. 93) 42
 Head and thorax strongly polished, not or very obscurely alutaceous; head about as wide as high; parameres barely produced laterally, but with a broad median lobe (Figs. 92, 94) 43
42. Front moderately shining, rather weakly alutaceous; median apical lobes of aedoeagus rather large, bearing minute denticles (Fig. 109) (Costa Rica) 38. *angustata* (Evans)
 Front rather dull, strongly alutaceous; median apical lobes of aedoeagus minute, attenuate (Fig. 93) (Tabasco, Veracruz) 39. *microchela* (Kieffer)
43. Clypeus very short, median lobe extending only slightly beyond lateral lobes (Fig. 100); median apical lobes of aedoeagus forming a point which is nearly or quite as long as lateral lobes (Fig. 94) (Morelos, state of Mexico) 41. *tlahuicana* n. sp.
 Clypeus slightly larger, median lobe extending well beyond lateral lobes (Figs. 99, 101); median apical lobes of aedoeagus much shorter than lateral lobes 44
44. Antennae uniformly dark brown; legs brownish basally; lateral lobes of aedoeagus of moderate size, exceeding the strong, pointed median lobes (Fig. 92) (Michoacan, Chiapas) 40. *tarascana* n. sp.
 Scape and basal parts of flagellum bright yellowish-brown; legs bright testaceous except front coxae weakly infuscated; lateral lobes of aedoeagus unusually large, far exceeding the much reduced median lobes (Fig. 108) (Veracruz) 42. *olmeca* n. sp.
45. Front alutaceous, with only weak punctures; thoracic dorsum and sides of propodeal disc alutaceous; pronotum with a transverse groove

- just before posterior margin; genitalia as in Figure 95 (Venezuela) 44. *alutacca* n. sp.
- Front polished, barely if at all alutaceous, with distinct punctures; thoracic dorsum and sides of propodeal disc polished, not or barely alutaceous; pronotum at most very indistinctly grooved before posterior margin 46
46. Posterior slope of propodeum smooth and polished, with only some weak striae below, carina margining disc behind standing out strongly; aedoeagus terminating in large, free apical lobes, constricted just below lobes (Fig. 111) (Brazil) 48. *brasilensis* (Kieffer)
- Posterior slope of propodeum wholly covered with transverse striae, the carina margining the disc behind barely differentiated from the uppermost of these striae; aedoeagus not of this form 47
47. Mandibles with all the teeth strong and well separated (Fig. 116); greater part of flagellum dull brown, but legs wholly bright testaceous; aedoeagus with apical lobes small, free, not compressed (Fig. 106) (Peru) 49. *peruana* n. name
- Mandibles with the third and fourth teeth small and close together (Fig. 115); flagellum testaceous or the legs mostly brownish; aedoeagus with large, strongly compressed apical lobes 48
48. Propodeal disc about 1.1 X as wide as long; antennae dull brown; punctures of front rather weak (Ecuador) 45. *zamora* n. sp.
- Propodeal disc about 1.3 X as wide as long; antennae bright, pale castaneous or testaceous basally; punctures of front sharply defined although small 49
49. Coxae and femora brownish; apical lobes of aedoeagus elongate, minutely denticulate (Fig. 110) (Brazil) 46. *transversa* n. sp.
- Legs wholly testaceous; apical lobes of aedoeagus smaller, not denticulate (Fig. 105) (Venezuela) 47. *venezuelana* n. sp.
50. Clypeus moderately long, its sides approaching evenly to an obtusely angulate apex (Fig. 125), median carina of clypeus fairly strong (Peru) 50. *nitida* (Kieffer)
- Clypeus very short, its sides approaching gradually to a bidentate or narrowly truncate apex (Fig. 124), median line weakly elevated 51
51. Head very wide across eyes (WH 1.04-1.07 X LH); ocelli slightly enlarged, lateral ocelli less far removed from eyes (OOL 1.0-1.1 X WOT); flagellar pubescence rather short (Brazil) 54. *laticeps* n. sp.
- Head slightly if at all wider than high (WH .99-1.03 X LH); ocelli not enlarged, lateral ocelli far removed from eyes (OOL 1.2-1.6 X WOT) 52
52. Flagellar pubescence short, setulae of segment eleven about half as long as width of segment; transverse pronotal carina very delicate; lateral apical lobes of aedoeagus very slender, not exceeding median lobes (Fig. 121) (Brazil) 53. *quadrata* n. sp.
- Flagellar pubescence longer, setulae of segment eleven more than half as long as width of segment; transverse pronotal carina strong;

- lateral apical lobes of aedoeagus broader and exceeding median lobes (Figs. 120, 123) 53
53. Median carina of propodeum not quite reaching transverse carina; lateral apical lobes of aedoeagus narrow, subacute (Fig. 120) (Brazil, Venezuela) 51. *paraensis* (Kieffer)
- Median carina of propodeum reaching transverse carina or very nearly so; lateral apical lobes of aedoeagus broad and blunt (Fig. 123) (Bolivia, Peru) 52. *truncaticeps* (Kieffer)

Females

1. Clypeus with a relatively narrow, strongly produced median lobe which is rounded or subangulate apically; mandibles with four distinct teeth (Figs. 127, 128) 2
- Clypeus broadly truncate or emarginate apically; mandibles with two or three teeth, rarely with weak indication of a fourth tooth (Figs. 129-133) 3
2. Eye consisting of several (3-7) ill-defined facets, distinctly darker than head; propodeal spiracles directed laterad, situated well back from anterior margin of propodeum (Fig. 136); fourth mandibular tooth the smallest (Fig. 127) (eastern United States) 37. *parapolita* n. name
- Eye consisting of a single facet, much paler than head; propodeal spiracles fully dorsal, located far forward and preceded by a shallow groove (Fig. 137); third mandibular tooth the smallest (Fig. 128) (Panama) 55. *paradoxa* n. sp.
3. Eye unusually large, about .3 as long as distance between eyes, with 14 convex, clearly defined facets; propodeum widest in front of spiracles, behind spiracles narrow and parallel-sided (Fig. 138) (Texas) 56. *insolita* n. sp.
- Eye small, less than .2 as long as distance between eyes, with a smaller number of ill-defined facets; propodeum at least as wide behind spiracles as in front of spiracles, its sides arcuate behind spiracles (Figs. 134, 135) 4
4. Mandibles with three strong teeth and weak indication of a fourth tooth basad of these (Fig. 129); propodeum as wide in front of spiracles as behind them, and with a weak median impression (Fig. 135) (Dominica in Lesser Antilles) 59. *dominica* n. sp.
- Mandibles with two strong teeth, with or without some indication of a third tooth (Figs. 130-133); propodeum wider behind spiracles than in front of them and without a median impression (as in Fig. 134) 5
5. Abdomen with an unusually long petiole, the petiole actually .6 as long as the hind tibia; antennae strongly incrassate, segment eleven approximately twice as wide as segment three; length under 3 mm. (Jamaica) 57. *delicata* n. sp.
- Abdomen with a very short petiole or none at all; antennae slender or weakly incrassate, width of segment eleven not more than 1.5 X width of segment three; length over 4 mm. 6

6. Dorsal and lateral surfaces of mesopleurum separated by a sharp ridge; head relatively elongate, length from 1.08 to 1.17 X width; abdomen distinctly darker than head and thorax 7
 Dorsal surface of mesopleurum rounded gradually onto lateral surface; head almost square, length from .97 to 1.04 X width; body entirely testaceous to castaneous 9
7. Mandibles with third tooth relatively well-defined and located a short distance back along inner margin (as in Fig. 130); a relatively more elongate species, pronotal disc about 1.5 X as long as wide, propodeum 2.1 X as long as its maximum width (Bolivia) 60. *substriata* (Kieffer)
 Mandibles with third tooth indistinct or absent, when indistinct situated far back along inner margin (Figs. 131, 133); relatively more robust species, pronotal disc not more than 1.4 X as long as wide, propodeum from 1.8 to 2.05 X as long as its maximum width 8
8. Clypeal emargination rather shallow, not reaching the inter-antennal prominence; inner margin of mandibles simple (Fig. 133) (Costa Rica) 59. *amoena* n. sp.
 Clypeal emargination strong, reaching the strong, rounded, inter-antennal prominence; inner margin of mandibles subdentate at a considerable distance back from the apex (Fig. 131) 61. *amazonica* Westwood
9. Head noticeably longer than wide, LH 1.04 X WH; front polished, non-alutaceous (Panama) 62. *flavipes* Cameron
 Head barely if at all longer than wide, LH .97-1.03 X WH; front polished but in most specimens very weakly alutaceous (Mexico to Costa Rica) 63. *chontalica* Westwood

PILICORNIS SPECIES-GROUP

This very distinctive group contains eight known species, all very closely related. The antennae are strikingly different from those of any other species group, as the pubescence is short and the under side of the flagellum bears many erect setae. The pronotum is also of characteristic shape, the disc being ecarinate, relatively elongate, and with the sides concave as seen from above. The abdomen is sessile. The genitalia are characterized by truncate, unlobed parameres, by an apical aedoeagal lobe which is directed sharply ventrad at a 45-90° angle with the main part of the aedoeagus, and by having the volsellar cuspis at the end of a process which is deeply separated from the digitus, the latter with the two arms closely associated. There are only very minor differences between the genitalia of the various species. All species are black with more or less castaneous antennae, dark legs, and the abdomen weakly to strongly suffused with rufous

or brownish apically. The group ranges from southern Mexico to Bolivia and southern Brazil. See Table II and Plate 1 for summary and illustrations of some of the characters of members of this complex.

TABLE II. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF PILICORNIS GROUP

Species	LFW (mm.)	WH/LH	WF/HE	OOL/WOT	Ant. 11 L/W	Propodeal disc W/L	Reduction in 4th tooth mandibles
1. pilicornis	4.4	0.95	1.05	1.03	3.5	1.10	slight
2. ornata	6.6	0.93	1.45	1.60	3.5	1.10	none
3. tenebrosa	5.4	0.98	1.20	1.35	4.0	1.15	moderate
4. angusticeps	3.3	0.95	1.10	1.30	2.5	1.05	moderate
5. elongata	4.7	0.92	1.07	1.30	3.0	0.90	none
6. reducta	4.0	0.98	1.15	1.25	3.0	1.10	great
7. guatemalensis	4.1	0.95	1.20	1.20	2.7	1.05	slight
8. punctata	3.4	0.95	1.30	1.30	2.4	1.08	moderate

1. APENESIA PILICORNIS new species

Holotype. — ♂, PANAMA: Pacora, Canal Zone, 13 May 1953 (F. S. Blanton) [USNM, No. 66005].

Description of type. — Length 5.9 mm.; LFW 4.4 mm. Head and thorax shining black; first abdominal segment black with pale brown lateral streaks; second segment and base of third piceous, remainder of abdomen bright rufo-castaneous; mandibles castaneous except base infuscated and teeth rufous; palpi straw-colored; antennae wholly castaneous except apical segments weakly infuscated; tegulae testaceous; coxae and middle and hind femora dark reddish-brown, legs otherwise castaneous except tarsi tinged with blackish; wings subhyaline, veins and stigma dark brown. Mandibles with five teeth, third and fourth teeth the smallest, basal tooth rather prominent (Fig. 8). Clypeus moderately long, broadly truncate except for a faint indication of a median tooth (Fig. 13); median carina very strong, abruptly declivous well before margin. First four antennal segments in a ratio of about 23:4:14:13, segment three 2.2 X as long as thick, segment eleven 3.5 X as long as thick; pubescence pale, sub-appressed, setulae of segment four only about .15 X as long as thickness of segment; erect setae rather sparse except on underside of segments 3-9, to a lesser extent 10 and 11, where these setae are numerous and conspicuous, measuring .3 to .6 as long as width of segments bearing them. Front polished, non-alutaceous, with small though strong punctures which are separated for the most part by less than their own diameters, though more widely spaced above; vertex and temples somewhat more

weakly punctate. Head slightly longer than wide, WH .95 X LH; inner orbits subparallel below, front actually very slightly wider at the middle of the eyes than at their bottoms; WF .58 X WH, 1.05 X HE. Vertex extended above eye tops a distance equal to about two-thirds HE; anterior ocellus nearly touching a line drawn between eye tops; posterior ocelli removed from vertex crest by a distance nearly equal to WOT; ocellar triangle compact, OOL very slightly greater than WOT; DAO .18 X WF. Pronotal disc rather elongate, nearly flat, in front obliquely declivous to much lower plane of collar, sides of disc, as seen from above, slightly concave (Fig. 15); disc shining and with strong, well spaced punctures, without sculpturing except for a very shallow transverse impression a short distance before the posterior margin; collar transversely rugose. Mesoscutum shining, sparsely punctate except punctures more crowded along notauli, the latter not quite reaching anterior margin; scutellar disc with small punctures except along median strip. Propodeal disc 1.1 X as wide as long, with strong margining carinae laterally and posteriorly; median carina strong except weakened just before meeting transverse carina; disc with a basal triangle which is slightly depressed and filled with longitudinal, slightly diverging carinae, remainder of disc polished and without sculpturing; side-pieces of propodeum weakly striate, posterior face with only some weak sculpturing. Mesopleurum shining, punctate, callus prominent and without punctures. Fore wing with discoidal cell very weakly outlined by pigmented lines, also with first recurrent vein weakly indicated and subdiscoidal and radial veins weakly continued to wing margin. Subgenital plate arcuately concave apically. Genitalia with the parameres abruptly truncate apically, mesally strongly hollowed out for the reception of the complex volsellar structures; ventral arm of digitus moderately elongate (Figs. 1, 2).²

Paratypes. — PANAMA: 1 ♂, Pacora, Canal Zone, same data as type [MCZ]; 1 ♂, Gamboa, Canal Zone, 17 July 1918 (sweeping, H. Dietz & J. Zetek) [USNM]; 2 ♂♂, Barro Colorado Island, Canal Zone, 28 March 1955 (C. Rettenmeyer), 22 Dec. 1928 (C. H. Curran) [KU, AMNH]. MEXICO: CHIAPAS: 3 ♂♂, Simojovel, 28 Sept. 1961 (F. Pacheco M.) [Escuela Nac. Agri., Chapingo, Mex.]; 1 ♂, 19 km. NE Bochil, 28 Sept. 1961 (F. Pacheco M.) [Escuela Nac. Agri., Chapingo, Mex.]. COSTA

² Description and figure of genitalia based on paratype from Barro Colorado Island (C. H. Curran); the genitalia of the type were not extracted.

RICA: 1 ♂, Port Parker, 4 July 1932 (M. Willows) [CAS].
VENEZUELA: 1 ♂, Los Castillitos, D. F., 27 Feb. 1938 (Vivas Berthier) [HKT].

Variation.—LFW varies from 3.0 to 4.4 mm. There is some variation in the amount of rufous on the tip of the abdomen. The least amount of rufous is present in the Mexican and Costa Rican specimens (only the apical two or three segments). In the Venezuela specimen, the Barro Colorado specimens, and the Gamboa specimen, the entire abdomen is rufous, though the basal tergites are dusky. In some specimens the legs are entirely brown. In the Venezuela specimen the side pieces of the propodeum are completely smooth and the apex of the aedeagus slightly more expanded. In the Costa Rica and Venezuela specimens the median earina of the propodeum is obsolescent on the posterior fourth of the disc. In the series from Chiapas, Mexico, the front is relatively slightly broader than in the remainder of the series, WF varying from .60-.62 X WII, 1.10-1.20 X HE; OOL varies from 1.12-1.29 X WOT.

2. APENESIA ORNATA new species

Holotype.—♂, BRAZIL: Nova Teutonia, Santa Catarina, 2 Nov. 1939 (Fritz Plaumann) [MCZ, No. 30341].

Description of type.—Length 10 mm.; LFW 6.6 mm. Head and thorax shining black; abdomen black except sides of first segment suffused with castaneous and whole abdomen beyond segment four bright rufo-castaneous, the apical segment almost yellow; palpi brownish; mandibles black except apical third somewhat rufous; scape black, second segment somewhat infuscated, rest of antenna bright castaneous except apical segments weakly infuscated; tegulae fuscous; legs black except tarsi dark brown; fore wing lightly tinged with brownish, veins and stigma dark brown, hind wings subhyaline. Mandibles with five strong teeth in an oblique series (Fig. 9). Clypeus broadly truncate except for a weak median tooth; median carina high, arched in profile, abruptly declivous just before margin. First four antennal segments in a ratio of about 30:7:19:17, segment three 2.5 X as long as thick, segment eleven 3.5 X as long as thick; pubescence very fine, pale, appressed; erect setae small and sparse except longer and much more dense on underside of segments 4-7, to a lesser extent 3 and 9-10, these setae mostly somewhat less than half as long as thickness of segments bearing them. Front polished, non-alutaceous, with small but strong punctures which are

separated by approximately their own diameters; upper front, vertex, and temples with punctures weaker and more widely separated. Head slightly longer than wide, WH .93 X LH; inner orbits subparallel below, front very slightly wider at middle of eyes than at bottoms; WF .64 X WH, 1.45 X HE. Vertex extended above eye tops a distance about equal to HE; ocellar triangle compact, posterior ocelli removed from vertex crest by a distance greater than WOT; OOL 1.6 X WOT; DAO .13 X WF. Pronotum as described and figured for *pilicornis* (Fig. 15), the transverse subapical depression shallow but well defined. Mesoseutum sparsely punctate, notauli strong and nearly complete; median portion of scutellar disc impunctate. Propodeal disc 1.1 X as wide as long, with strong margining carinae laterally and posteriorly; median carina complete; basal triangle slightly depressed and with a rather irregular network of carinae, remainder of disc smooth except striate laterally; side pieces and declivity somewhat striate. Mesopleurum polished, punctate except for the prominent callus. Fore wing as in *pilicornis* except the discoidal cell somewhat more distinctly outlined, the subdiscoidal vein being especially strong. Subgenital plate broadly truncate apically. Genitalia with the parameres and ventral arm of digitus more elongate than in *pilicornis* (Fig. 4).

Paratypes.—BRAZIL: 8 ♂♂, Nova Teutonia, same data as type except various dates June-Aug., Nov., 1938-61 [MCZ, USNM, BMNH, HKT].

Variation.—LFW varies from 5.5 to 6.7 mm. In some specimens the scape is only moderately infuscated and in some only the basal 3.5 abdominal segments are black, the remainder rufous. WF is relatively constant, varying from 1.40-1.52 X HE. Otherwise little variation can be noted in this series.

3. APENESIA TENEBROSA new species

Holotype.—♂, BRAZIL: Rio de Janeiro, January 1939 (Yellow fever survey, R. C. Shannon) [USNM, No. 66006].

Description of type.—Length 9.0 mm.; LFW 5.4 mm. Head and thorax shining black, abdomen piceous except apical segment rather weakly suffused with yellowish brown; palpi straw-colored; mandibles black except rufous apically; antennae wholly bright castaneous except apical segments weakly infuscated; tegulae infuscated except pale and translucent on the outer side; coxae piceous; trochanters wholly pale straw-colored; femora dark reddish brown except paler at extreme base and apex; tibiae

brownish but paler at base and apex and also paler on inner face, especially the front tibiae; tarsi light brown; wings very lightly tinged with brown, veins and stigma dark brown. Mandibles with five teeth, fourth tooth the smallest, fifth tooth rather broad, reflexed inward (about as in *angusticeps*, Fig. 10). Clypeus broadly truncate apically, with a weak median tooth; median carina moderately strong, in profile nearly straight. First four antennal segments in a ratio of about 28:5:20:18, segment three 2.7 X as long as thick, segment eleven 4 X as long as thick; pubescence pale, short, semi-erect; erect setae sparse and inconspicuous except on underside of segment 3-10, especially 4-6; longest setae of segment four about .4 as long as thickness of segment. Front strongly polished, non-alutaceous, with small but strong, evenly distributed punctures, for the most part separated by approximately their own diameters; vertex and temples somewhat more weakly punctate. Head very slightly longer than wide; inner orbits subparallel below, WF .59 X WH, 1.2 X HE. Vertex extended above eye tops a distance equal to about .7 X HE; diameter of anterior ocellus .16 X WF; OOL 1.35 X WOT; posterior ocelli removed from vertex crest by a distance roughly equal to WOT. Pronotal collar and disc of the usual form in this species-group; transverse depression paralleling posterior margin well developed; surface with strong, evenly distributed punctures. Mesoscutum with punctures slightly more widely spaced; notauli strong and complete; center of scutellar disc impunctate. Propodeal disc 1.15 X as wide as long; lateral and posterior transverse carinae well developed, subfoveolate on their inner sides; median carina weakened behind, barely reaching transverse carina; basal triangle of disc slightly depressed, filled with weakly radiating longitudinal carinae, remainder of disc strongly polished; declivity and side pieces very weakly striate and with a few weak punctures. Mesopleurum strongly and closely punctate, callus very large, impunctate. Fore wing with subdiscoidal vein strong to end of discoidal cell, then continued on weakly to wing margin; discoidal vein arising a short distance down on transverse median vein, weaker than subdiscoidal vein; discoidal cell also closed off apically with a pigmented line, first recurrent vein also weakly indicated. Subgenital plate weakly arcuately concave. Genitalia much like those of *pilicornis*, the parameres slightly more hairy on the outer side (Fig. 5).

Paratype. — BRAZIL: 1 ♂, same data as type except October 1938 [USNM].

Variation.—The paratype is very similar to the type in size, color, and most structural details. The only noticeable difference pertains to the sculpturing of the basal triangle of the propodeum; in the paratype there are several transverse ridges in this area, giving it a much more reticulate appearance.

4. APENESIA ANGUSTICEPS new species

Holotype.—♂, BOLIVIA, "Prov. Sara" (= Prov. Gutiérrez, Dept. Santa Cruz) (Steinbach) [MCZ, No. 30433].

Description of type.—Length 5.0 mm.; LFW 3.3 mm. Head and thorax black; abdomen black except apical tergite and apical two sternites suffused with rufo-castaneous; palpi straw-colored; mandibles black, apical third suffused with rufous; antennae uniformly castaneous except scape somewhat infuscated; tegulae testaceous; legs dark brown, tibiae paler at base and apex, tarsi light yellowish brown; wings subhyaline. Mandibles with five teeth, fourth tooth the smallest, basal tooth rather large, reflexed inward (Fig. 10). Clypeus moderately long, truncate apically but with an indistinct, minute median tooth; median carina strong, arched in profile. First four antennal segments in a ratio of about 35:7:22:30, segment three 2.2 X as long as thick, segment eleven about 2.5 X as long as thick; pubescence pale, subappressed; erect setae sparse and small except on underside of segments 4-7, to a lesser extent 3 and 8-10; longest setae on segment four about half as long as thickness of segment. Front polished, punctures strong, rather crowded on midline below, elsewhere separated by about their own diameters except smaller and more widely separated above and on the vertex and temples. Head longer than high, WH .95 X LH; eyes slightly closer together near bottom than at middle; WF .58 X WH, 1.10 X HE. Vertex extended above eye tops a distance equal to about two-thirds HE; ocellar triangle compact, posterior ocelli removed from vertex crest by a distance about equal to WOT; OOL 1.3 X WOT; DAO .16 X WF. Pronotum elongate, its sides concave as seen from above, groove paralleling posterior margin fairly strong; collar transversely rugulose; disc shining, punctures rather small and sparse, completely absent along a wide median strip. Mesoseutum shining, sparsely punctate; notauli strong on posterior .8; scutellar disc shining and impunctate. Propodeal disc very slightly wider than long, smooth and polished except for a basal triangular area filled with longitudinal carinae; median carina reaching the posterior transverse carina although

weakened behind; side pieces polished, sculpturing almost absent. Mesopleurum polished, sparsely and rather coarsely punctate, except callus impunctate. Fore wing with subdiscoidal vein fairly strong, continued to wing margin as a faintly pigmented streak; discoidal vein arising a short distance down on the transverse median vein, very weak, discoidal cell also closed on outer side by a very weak pigmented line. Subgenital plate broadly arcuately concave apically. Genitalia with the parameres moderately long, obliquely truncate apically; ventral arm of digitus unusually short (Fig. 3).

Remarks.— This species is known from the type specimen only.

5. APENESIA ELONGATA new species

Holotype.— δ , BRAZIL: Rio de Janeiro, November (no further data) [USNM, No. 66007].

Description of type.— Length 6.2 mm.; LFW 4.7 mm. Head and thorax shining black; abdomen black except sides of first tergite and all of last tergite suffused with yellowish brown; palpi straw-colored; apical third of mandibles dull rufous; scape moderately infuscated, flagellum light brown, very slightly darker apically than basally; collar dark castaneous; tegulae dusky castaneous; coxae dark brown, trochanters straw-colored, femora dark brown, tibiae and tarsi medium brown, the joints paler; wings subhyaline. Mandibles with five strong teeth (as in Fig. 9). Clypeus produced and rounded apically, with a small median tooth (Fig. 14); median carina strong, in profile nearly straight except roundly declivous well before margin of clypeus. First four antennal segments in a ratio of about 22:5:13:12, segment three 2.6 X as long as thick, segment eleven 3 X as long as thick; pubescence pale, short though semi-erect, erect setae sparse except on underside of segments 3-10, where it is long and abundant, longest setae on segment four about .6 as long as thickness of segment. Front shining, non-alutaceous, with coarse punctures which are separated by about or somewhat less than their own diameters; vertex and temples with punctures much weaker and more widely spaced. Head distinctly longer than wide, WH .92 X LH; inner orbits subparallel below, WF .59 X WH, 1.07 X HE; vertex broadly rounded, distance from eye tops to vertex crest equal to slightly more than half HE. Ocelli of moderate size, DAO .19 X WF, in a compact triangle; OOL 1.3 X WOT; posterior ocelli removed from vertex crest by a distance somewhat less than WOT. Pronotum shaped as in *pilicornis* (Fig. 15);

collar transversely rugose; transverse subapical groove shallow and ill-defined; punctures well spaced, absent from a rather narrow median band. Mesoscutum with strong punctures scattered over most of its surface, more crowded posteriorly and along notauli; center of scutellar disc polished and impunctate. Propodeal disc 0.9 X as wide as long; lateral carinae strong, posterior transverse carina complete, somewhat sinuate; median carina stopping well short of transverse carina but continued on as a weak, subfoveolate impression to the carina; basal triangle rather elongate, filled with several irregular longitudinal ridges and some weaker transverse ridges, margined by shallow depressions; posterior and lateral parts of disc polished and without sculpturing; posterior face of propodeum strongly polished, somewhat convex; side-pieces polished but with some weak striae and punctures. Mesopleurum with scattered punctures except on the callus. Fore wing with discoidal vein starting out a strong stub arising well down on transverse median vein, then abruptly transformed into a very pale pigmented line; subdiscoidal vein more strongly pigmented, outer side of discoidal cell closed off by a very faint brownish streak. Subgenital plate strongly arcuately concave. Genitalia with the parameres moderately long, ventral arm of the digitus elongate and much as in *ornata* (Fig. 6).

Paratypes.—BRAZIL: 1 ♂, Nova Teutonia, Santa Catarina, 13 April 1938 (F. Plaumann) [BMNH]; 1 ♂, same data except Jan. 1963 [MCZ].

Variation.—The paratypes are smaller than the type (LFW 4.0-4.1 mm.) and have the scape, base of the flagellum, and apical two-thirds of the mandibles bright castaneous; however, the trochanters are darker than in the type. Both specimens have the front slightly wider than in the type (WF 1.10 and 1.18 X HE, OOL 1.37 and 1.40 X WOT).

6. APENESIA REDUCTA new species

Holotype.—♂, BRAZIL: Chapada, January (no further data) [CM].

Description of type.—Length 6.0 mm.; LFW 4.0 mm. Head and thorax shining black, abdomen piceous except apical two segments strongly suffused with rufous; palpi light brown; mandibles black, apical third suffused with rufous; scape black, rest of antennae castaneous except weakly infuscated apically; tegulae testaceous; legs dark brown except paler at joints, tarsi

wholly light yellowish-brown; wings subhyaline. Mandibles with fourth tooth reduced to a scarcely noticeable denticle at the base of the notch between the large third and fifth teeth, the mandibles thus essentially 4-toothed (Fig. 11). Clypeus short, broadly truncate, with a small, rounded median tooth; median carina low, straight in profile. First four antennal segments in a ratio of 21:4:12:12, segment three twice as long as thick, segment eleven about 3 X as long as thick; pubescence pale, very short although semi-erect, erect setae sparse except on underside of segments 4-7, to a less extent 3 and 8, longest setae on segment four about half as long as width of segment. Front shining, non-alutaceous, with strong punctures which are separated by about or somewhat less than their own diameters; vertex and temples with punctures more shallow and widely spaced. Head very slightly longer than wide; inner orbits convergent below, WF .57 X WH, 1.15 X HE. Vertex extended above eye tops a distance nearly equal to HE; ocelli in a compact triangle, posterior ocelli removed from vertex crest by a distance about equal to WOT; OOL 1.25 X WOT; DAO .18 X WF. Pronotal disc shaped much as in *pilicornis*; collar with transverse rugae; transverse subapical impression rather weak; disc with strong, rather evenly distributed punctures which are separated by somewhat more than their own diameters. Mesoscutum with strong punctures which are widely spaced except more crowded along notauli; notauli strong except weakened anteriorly and barely reaching anterior margin; center of scutellar disc impunctate. Propodeal disc 1.1 X as wide as long; lateral carinae strong, but posterior transverse carina rather weak, obsolete medially; basal triangle slightly depressed, broad and short, filled with weakly radiating longitudinal carinae, median carina the longest but reaching only .6 the length of the disc; disc behind basal triangle very strongly polished, without any sculpturing whatever; declivity and side pieces polished, obscurely sculptured. Mesopleurum strongly polished, callus large and impunctate, rest of mesopleurum with small, widely spaced punctures. Fore wing as described for *pilicornis*. Subgenital plate broadly arcuately concave apically. Genitalia with the parameres of moderate length; dorsal arm of digitus unusually wide, ventral arm unusually short (Fig. 12).

Remarks.— This species is known only from the type.

7. APENESIA GUATEMALENSIS new species

Holotype.— ♂, GUATEMALA: Guatemala City, 9 June 1949 (K. W. Cooper) [USNM, No. 66008].

Description of type. — Length 6.2 mm.; LFW 4.1 mm. Body shining black except apical two segments of abdomen suffused with orange-brown; palpi light brown; apical half of mandibles yellowish brown, teeth rufous; antennae wholly bright castaneous except apical segments somewhat infuscated; tegulae testaceous; front coxae black, remaining coxae and all the femora dark reddish brown except paler at the joints; trochanters brownish except middle pair light yellowish brown; middle and hind tibiae dark brown, paler basally and apically; front tibiae and all tarsi light brown; wings hyaline, stigma, costa, subcosta, and radial vein brown, rest of veins amber. Mandibles with five teeth (about as figured for *pilicornis*, Fig. 8). Clypeus broadly truncate, median tooth barely suggested; median carina strong, in profile straight except abruptly declivous somewhat before apical margin. First four antennal segments in a ratio of about 20:4:12:11, segment three 2.2 X as long as thick, segment eleven 2.7 X as long as thick; pubescence pale, very short though semi-erect, erect setae sparse except on under side of segments 3-8, especially 4-6, where they are abundant and fairly long; longest setae of segment four about one-third as long as width of segment. Front polished, non-alutaceous, punctures small though strong, separated from one another by about or somewhat less than their own diameters; vertex and temples somewhat more weakly punctate. Head .95 X as wide as high; inner orbits weakly convergent below, WF .62 X WH, 1.2 X HE. Vertex extended above eye tops a distance equal to about .8 X HE; diameter of anterior ocellus .16 X WF; OOL 1.2 X WOT; posterior ocelli removed from vertex crest by a distance nearly as great as WOT. Pronotal collar and disc of the usual form in this species-group; transverse subapical impression rather weak; disc with strong, rather evenly distributed punctures. Mesoscutum sparsely punctate except with punctures crowded along the notauli, the latter rather shallow, not reaching anterior or posterior border; scutellum with small punctures except medially. Propodeal disc very slightly wider than long, lateral carinae strong but transverse carina obsolete medially; basal triangle not notably depressed, broad and short, filled with slightly radiating longitudinal carinae, median carina the longest but not nearly reaching the transverse carina; posterior part of disc smooth, strongly polished; declivity and side-pieces also strongly polished, with only a few weak punctures. Mesopleurum with the punctures smaller and more widely spaced behind than in front, absent from the rather slender callus. Fore wing with veins surrounding

discoidal cell above, below, and on outer side all very faintly indicated. Subgenital plate arcuately concave apically, apical tergite rounded apically. Genitalia bearing a close resemblance to those of *pilicornis* and *tenebrosa* (Fig. 7).

Paratype.—EL SALVADOR: 1 ♂, Quezaltepeque, 21 June 1961 (M. E. Irwin) [UCD].

Variation.—The paratype is strikingly similar to the type but is smaller (length 5.0 mm., LFW 3.4 mm.). The antennae are somewhat shorter, segment three measuring 1.7 X as long as thick, segment eleven 2.3 X as long as thick. WF is .58 X WH, 1.12 X HE; OOL is 1.18 X WOT.

8. APENESIA PUNCTATA (Cameron) new combination

Epyris punctatus Cameron, 1888, Mem. Proc. Manchester Lit. Phil. Soc., 1: 174-175. [Type: ♂, MEXICO: VERACRUZ: Orizaba, Dec. 1887 (H. H. Smith) (BMNH)].—Cameron, 1899, Biol. Centr.-Amer., Hy-men. I, Suppl., p. 473. — Kieffer, 1905, Ann. Soc. Sci. Bruxelles, 29:111. — Kieffer, 1914, Das Tierreich, 41: 466.

Description of type.—Length 4.8 mm.; LFW 3.4 mm. Head and thorax piceous, abdomen dark brown, slightly paler basally and apically; palpi straw-colored; mandibles light brown on apical two-thirds; antennae bright, pale castaneous except scape and apical few segments suffused with brownish; legs brown, tibiae very light brown; wings subhyaline, veins and stigma brown. Mandibles with five teeth, fourth tooth smaller than the others (about as figured for *angusticeps*, Fig. 10). Clypeus truncate, with a very weak median tooth, median carina rather low. First four antennal segments in a ratio of about 33:9:18:17, segment three 2.1 X as long as thick, segment eleven 2.4 X as long as thick; pubescence semi-erect, pale, longest setulae of segment eleven .3 as long as width of segment; erect setae abundant on undersides of basal flagellar segments, longest ones about half as long as width of segments. Front polished, non-alutaceous, punctures strong, separated by about their own diameters, even the broad area above the ocelli strongly punctate. WH .95 X LH; inner orbits convergent below, WF .63 X WH, 1.30 X HE. Ocelli in a compact triangle, DAO .21 X WF; OOL 1.3 X WOT. Vertex elevated far above eye tops, broadly rounded; distance from eye tops to vertex crest nearly equal to HE. Pronotum elongate and with concave sides as seen from above; disc shining, strongly punctate except more weakly so along midline. Mesoscutum shining, weakly punctate; scutellar disc

impunctate in center. Propodeal disc 1.08 X as wide as long, basal triangle reticulate, but disc otherwise smooth and polished; median carina obsolete behind, not nearly attaining the transverse carina, which is obsolete medially. Mesopleurum shining, with sparse, small punctures. Fore wing with discoidal vein very weakly outlined by pigmented lines; subdiscoidal vein continued nearly to wing margin as a weakly pigmented streak. Apical margin of subgenital plate weakly concave. Genitalia not studied.

Remarks.— This species is known only from the type.

COLUMBANA SPECIES-GROUP

This group of seven relatively large species presents more structural diversity than does the preceding group. The flagellar pubescence is erect and bristling, and only one species (*flammi-cornis*) has a few setae which extend above the pubescence. The pronotum varies considerably in shape, but the sides are not concave as seen from above. The aedoeagus is rather similar throughout the group and has the apex deflected ventrad as in the preceding species-group. On the basis of the parameres and volsellae the group can be divided into two subgroups. One of these, which includes *columbana*, *sulcata*, and *striatula*, has the parameres produced subapically along the outer margin and has the inner margin of the volsella simple or weakly produced; in this group the pronotum has an apical or subapical transverse depression. In the remaining four species the parameres are slender and unlobed, and the inner margin of the volsella has a finger-like process; these species all lack a transverse impression on the pronotum. The group ranges from Panama to Bolivia and northern Argentina. See Table III and Plates 2 and 4 for summary and illustrations of some of the characters of this complex.

TABLE III. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF COLUMBANA GROUP

Species	LFW (mm.)	WF/HE	OOL/WOT	Ant. 11 L/W	Propodeal disc W/L	Color mandibles	Reduction in 4th tooth mandibles
9. <i>columbana</i>	5.4	1.15	1.40	5.0	1.15	pale	great
10. <i>sulcata</i>	4.2	0.95	1.40	4.3	1.00	pale	slight
11. <i>striatula</i>	6.0	1.00	1.00	5.0	1.05	pale	great
12. <i>funebria</i>	5.8	1.12	1.25	3.6	1.20	dark	slight
13. <i>flammi-cornis</i>	5.1	1.07	1.25	2.7	1.35	pale	great
14. <i>pallidicornis</i>	4.2	0.87	1.10	3.8	1.15	pale	slight
15. <i>photophila</i>	6.5	1.06	0.54	4.0	1.00	pale	complete

9. *APENESIA COLUMBANA* (Westwood) new combination

Pristocera columbana Westwood, 1874, *Thesaurus Ent. Oxoniensis*, p. 164, pl. XXIX, fig. 5. [Type: ♂, COLOMBIA (no further data) (D. Gaudichaud) (HCOU)]. — Kieffer, 1914, *Das Tierreich*, 41: 470.

Plesiotype. — ♂, COLOMBIA: Rio Frio, 12 Sept. (G. Salt) [MCZ].³

Description of plesiotype. — Length 8 mm.; LFW 5.4 mm. Head and thorax black, abdomen dark reddish brown; palpi brown; mandibles straw-colored except black at extreme base and the teeth rufous; scape black, remainder of antenna dark brown with a weak bluish cast; tegulae brown; coxae nearly black, legs otherwise dark brown, tarsi and joints somewhat paler; wings subhyaline, apical half of fore wing rather distinctly tinged with brownish. Mandibles with four large teeth, the true fourth tooth present as a minute denticle at the base of the notch between the third and fifth teeth (Fig. 24). Clypeus broadly truncate apically, the sides of the truncation subangular (Fig. 39); median ridge high, in profile abruptly, angularly cut off subapically; apical margin, seen from below, broadly triangular, the top of the triangle formed by the median ridge, surface of the triangle actually somewhat concave. First four antennal segments in a ratio of about 22:5:17:17, segment three 3.4 X as long as thick, segment eleven about 5 X as long as thick; pubescence erect, bristling, rather dark in color; setulae of segment eleven slightly longer than width of segment. Front polished, non-alutaceous, with strong punctures which are separated, for the most part, by about their own diameters; punctures of vertex, temples, and under side of head shallower and somewhat more widely spaced. Head very slightly higher than wide; inner orbits converging below, front distinctly wider at middle of eyes than near their bottoms; WF .56 X WH, 1.15 X HE. Vertex broadly rounded off far above eye tops, distance from eye tops to vertex crest equal to about .8 X IIE. Ocelli not enlarged, DAO .17 X WF; ocellar triangle compact, far removed from eyes and from vertex crest; OOL 1.4 X WOT; distance from posterior ocelli to vertex crest slightly greater than WOT; anterior ocellus slightly above a line connecting eye tops. Pronotum unusually short (Fig. 51), with smooth contours, rather rounded anteriorly and laterally, distinctly depressed at the

³ I have studied the type of this species, but it is somewhat greasy and the pronotum is missing. I therefore prefer to base my description on a specimen compared with the type.

extreme posterior margin so that there is a considerable constriction between the pro- and mesonota; surface of pronotum polished, with strong, well spaced punctures. Mesoscutum polished, with sparse, strong punctures; notauli broad and rather shallow behind, obsolescent in front; scutellar disc polished, with a few punctures. Propodeal disc 1.15 X as wide as long; lateral, sublateral, posterior, and median carinae all strong; disc with a few short longitudinal carinae arising from the base and a few small transverse striae arising from the median carina, but the greater part of the disc smooth and strongly polished; declivity and side-pieces polished and without noteworthy sculpturing. Mesopleurum punctate except on the small, elongate callus. Fore wing with the discoidal cell well outlined by pigmented lines, discoidal vein actually arising a very short distance up the basal vein; subdiscoidal vein visible as a faint line all the way to the wing margin, first recurrent vein also faintly visible. Abdomen sessile although rather slender basally (Fig. 23). Subgenital plate broadly truncate apically. Genitalia (Fig. 16) with the parameres broad apically; digitus with the ventral lobe strong, hairy, dorsal lobe very slender; inner margin of volsella with a small angular projection; aedoeagus with large apical lobes which are directed slightly ventrad.

Other males examined.—PANAMA: 16, Barro Colorado Isl., Canal Zone, Feb.-Oct. (J. Zetek, C. Rettenmeyer) [USNM, KU, MCZ]; 1, Limon Plantation, Chagres River, 14 July 1918 (sweepings around cornfield, Dietz & Zetek) [USNM].

Variation.—Very little variation in size or color can be noted in this series; LFW varies from 4.0 to 5.6 mm., color of the mandibles from light yellowish brown to almost white. Some variation can be noted in the width of the front (WF about 1.1-1.2 X HE). There are minor variations in the details of the sculpturing of the propodeum, but none of the specimens depart strongly from the condition described for the plesiotype.

10. APENESIA SULCATA new species

Holotype.—♂, PANAMA: Barro Colorado Island, Canal Zone, 30 March 1955 (Carl Rettenmeyer) [KU].

Description of type.—Length 6.0 mm.; LFW 4.2 mm. Head and thorax shining black; abdomen dark brown, suffused with lighter brown on sides of basal segment and at extreme tip; palpi straw-colored; mandibles straw-colored except teeth rufous; antennae dark brown except tip of scape paler, second segment

and to a lesser extent third and fourth also lighter brown; tegulae testaceous; front coxae black, remaining coxae and all trochanters straw-colored; femora all with a broad annulus of brown, straw-colored basally and apically; tibiae and tarsi yellowish-brown; wings subhyaline, veins and stigma dark brown. Mandibles with five well defined teeth, the fourth tooth somewhat smaller than the third and fifth (about as figured for *funbris*, Fig. 25). Clypeus slightly more produced and more narrowly truncate than in other species of this group, sides of the truncate portion rounded (Fig. 41); median carina very high, strongly arched in profile. First four antennal segments in a ratio of about 35:6:38:31, segment three unusually long, slightly swollen apically, nearly 5 X as long as its maximum width; segment eleven 4.3 X as long as thick; pubescence golden, erect, bristling, setulae of segment eleven about as long as thickness of segment. Front polished, non-alutaceous, punctures small, separated by from 1.5-3 X their own diameters; vertex, temples, and underside of head with punctures very small and widely separated. Head longer than wide, WH .92 X WH; inner orbits converging below, WF .54 X WH, .95 X HE. Eyes rather long, vertex rounded off a distance above eye tops equal to about .6 X HE; ocelli in a very compact triangle far from eyes and well removed from vertex crest; OOL 1.4 X WOT; DAO .18 X WF. Pronotal disc of moderate length, its sides converging evenly toward the front, the disc crossed by a sharply defined narrow groove just before the posterior margin; disc polished, sparsely punctate, without rugae. Mesoscutum polished, very sparsely punctate, notauli strong, diverging anteriorly; scutellar disc polished and impunctate. Propodeal disc as long as wide, with strong and complete lateral, sublateral, median, and posterior carinae; disc with a pair of basal carinae paralleling the median carina for a short distance, otherwise with rather uniform transverse striations; posterior slope and side-pieces with weak sculpturing. Mesopleurum polished, rather weakly punctate, callus without punctures. Fore wing with the discoidal cell very weakly outlined by pigmented lines. Subgenital plate weakly emarginate apically. Genitalia with aedoeagus as described and figured for *columbana* except the apical lobes slightly smaller and more truncate; lateral elements (Fig. 17) similar to *columbana*, but the parameres more acute and with two very large apical setae, the dorsal arm of the digitus longer and thicker, and the volsella without an angular projection on the inner margin.

Remarks. — This species is known only from the type.

11. APENESIA STRIATULA new species

Holotype. — ♂, BRAZIL: Santarem (no further data) [US NM, No. 66009].

Description of type. — Length 8.5 mm.; LFW 6 mm. Body shining, head and thorax black, abdomen dark reddish brown; palpi light brown; mandibles straw-colored except black at extreme base, the teeth rufous; antennae black, with a faint bluish cast, except second segment and tip of first dark ferruginous; tegulae brown; legs wholly dark brown except tarsi medium brown; wings subhyaline except apical two-thirds of fore wing tinged with brownish, most particularly in and below the radial cell. Mandibles with four large teeth, the true fourth tooth reduced to a small denticle at the base of the incision between the third and fifth teeth (as figured for *columbana*, Fig. 24). Clypeus broadly truncate apically, sides of the truncate portion subangular (Fig. 40); median carina very high, arched in profile, abruptly declivous apically; margin of the clypeus, as seen from below, in the form of a broad triangle, the top of the triangle formed by the median ridge. First four antennal segments in a ratio of about 25:4:18:17, segment three 3.3 X as long as thick, segment eleven 5 X as long as thick; pubescence erect and bristling, longest setulae of segment eleven longer than thickness of segment. Front polished, non-alutaceous, punctures strong, separated from one another by from 1 to 2 X their own diameters; vertex, temples, and underside of head with punctures weaker and more widely spaced. Head longer than wide, WH .95 X LH; inner orbits subparallel below, front about as wide at middle of eyes as below, WF .57 X WH, subequal to HE. Eyes somewhat bulging laterally; vertex rounded off above eye tops a distance equal to about .6 X HE. Ocelli slightly enlarged, DAO about .20 X WF, in a very compact triangle, separated by less than their own maximum diameters; front ocellus well below a line drawn between eye tops, posterior ocelli removed from vertex crest by a distance slightly greater than WOT; WOT and OOL subequal. Pronotal disc moderately long (Fig. 52), anteriorly with a series of fine transverse striae, posteriorly, a short distance before the hind margin, with a strong transverse, round-topped ridge followed by a shallow groove. Mesoscutum polished and with strong, well-spaced punctures; notauli strong on anterior .8, absent behind; scutellar disc sparsely punctate. Propodeal disc 1.05 X as wide as long, with strong lateral, sub-lateral, posterior, and median carinae; basal half of disc with

a pair of strong longitudinal carinae paralleling the median carina and connected with it by some strong ridges; greater part of disc transversely striate, the striations obsolescent on the posterior fourth; posterior slope and side pieces strongly polished, with only a small amount of sculpturing. Mesopleurum with many small punctures except the rather large callus without punctures. Fore wing with the subdiscoidal vein strong, beyond the discoidal cell weaker but reaching wing margin as a faint line; discoidal vein moderately strong, first recurrent vein and vein margining outer side of discoidal cell weakly pigmented. Abdomen sessile although slender basally (Fig. 22). Subgenital plate rounded apically. Genitalia (Fig. 18) much like those of *columbana*, but the parameres much more acute apically, the ventral arm of the digitus very short, and the apical lobes of the aedoeagus apparently wholly wanting, so that the aedoeagus terminates in two slender processes (it is possible that the aedoeagal lobes are broken off, though there is no evidence of a tear).

Paratype. — BRAZIL: 1 ♂ same data as type [USNM].

Variation. — The paratype is slightly smaller, measuring about 7 mm., LFW 5.3 mm. This specimen has the clypeus slightly longer and more narrowly truncate, the front slightly more sparsely punctate, the antennae dark brown rather than black. There is, however, close agreement with the type in head measurements and in the structure of the pronotum; the parameres are also similarly shaped.

12. APENESIA FUNEBRIS new species

Holotype. — ♂, BRAZIL: Rio de Janeiro, Nov. (no further data) [USNM, No. 66010].

Description of type. — Length 8.4 mm.; LFW 5.8 mm. Body shining, head and thorax black, abdomen dark reddish brown except sides of first tergite and apical half of last tergite yellowish brown; palpi brown; mandibles piceous; antennae wholly dark brown; tegulae dark brown; legs wholly dark brown except front and middle tarsi medium brown; wings uniformly and very lightly tinged with brownish. Mandibles with five strong teeth (Fig. 25). Clypeus broadly truncate apically, actually very weakly concave; median ridge forming a strong tooth sub-apically (general shape much as in *columbana*, Fig. 93, but apical margin much less distinctly triangularly flattened). First four antennal segments in a ratio of about 25:5:18:16, segment

three 2.8 X as long as its maximum width, segment eleven 3.6 X as long as thick; pubescence erect, bristling, brown, setulae of segment eleven about half as long as width of segment. Front strongly polished, non-alutaceous, punctures small, separated from one another by from 1.5 to 3 X their own diameters; vertex and temples with weaker and more widely spaced punctures. Head about as long as wide; inner orbits subparallel below, WF .57 X WH, 1.12 X HE. Vertex very broadly rounded off a distance above the eye tops equal to about two-thirds X HE. Ocelli not notably enlarged, DAO .17 X WF; front ocellus slightly above a line drawn between eye tops, distance from posterior ocelli to vertex crest subequal to WOT; OOL 1.25 X WOT. Pronotum of moderate length (Fig. 53), with smooth contours and without ridges or depressions; disc shining, with strong punctures which are separated by somewhat more than their own diameters. Mesosentum strongly polished, sparsely punctate, notauli very deep, but not quite attaining anterior or posterior margins; scutellar disc impunctate in the center. Propodeal disc 1.2 X as wide as long; lateral, posterior, and median carinae strong; sublateral carinae absent; basal triangular area with strong, somewhat radiating ridges, disc otherwise smooth and strongly polished; declivity and side pieces strongly polished, obscurely punctate. Mesopleurum strongly polished, with strong punctures except along posterior margin. Venation of fore wing as described for *striatula*. Subgenital plate broadly, weakly emarginate apically. Genitalia with the aedoeagus shaped much as in *columbana* except the apical lobes more complex; parameres (Fig. 20) slender and without an angulation on the outer side; ventral arms of digiti large, strongly setose; inner margin of volsella with a finger-like accessory process.

Paratype.—BRAZIL: 1 ♂, Nova Teutonia, Santa Catarina, 7 April 1937 (F. Plaumann) [BMNH].

Variation.—In the paratype, LFW measures 6.0 mm., WF 1.10 X HE, OOL 1.35 X WOT. The resemblance to the type is very close in every respect.

13. APENESIA FLAMMICORNIS new species

Holotype.—♂, BOLIVIA: Santa Cruz (J. Steinbach) (no further data) [MCZ, No. 30434].

Description of type.—Length 8 mm.; LFW 5.1 mm. Body shining black except basal two abdominal tergites weakly margined with dark reddish brown; palpi brown; mandibles straw-colored except rufous apically; scape black, flagellum bright

rufo-castaneous; tegulae black; coxae black, legs otherwise dark brown except joints and tarsi light brown; wings lightly tinged with brownish, veins and stigma brown. Mandibles as described and figured for *columbana* (Fig. 24), fourth tooth minute and barely noticeable. Clypeus broadly truncate apically, sides of the truncation rounded; margin linear as seen from below, not triangular as in *columbana*; median ridge rather low, subdentate just before apex. First four antennal segments in a ratio of about 21:4:13:12, segment three 2.1 X as long as its maximum width, segment eleven 2.7 X as long as wide; pubescence dense, erect, golden, setulae only about a third as long as width of segments bearing them, flagellum also with a very few hairs which extend slightly above the pubescence. Front polished, non-alutaceous, with moderately strong punctures which are separated by about their own diameters except more widely spaced above and below. Head about as wide as high; inner orbits strongly convergent below, WF .54 X WH, 1.07 X HE. Vertex very broadly rounded off far above eye tops, distance from eye tops to vertex crest equal to about two-thirds X HE. Ocelli not notably enlarged, DAO .19 X WF; OOL 1.25 X WOT. Pronotum considerably longer than in *columbana*, about as in *funnebris* (Fig. 53), with smooth contours, not depressed at or near posterior margin; disc polished and with strong punctures. Mesoscutum strongly polished and with only a few punctures; notauli very strongly impressed, not quite reaching the anterior or posterior margins; scutellar disc impunctate in the center. Propodeum very short, disc 1.35 X as broad as long; lateral and posterior carinae fairly strong, median carina obsolescent behind; disc with a number of short, basal longitudinal carinae and with a few short transverse carinae emanating from the median carina, otherwise smooth and polished; declivity and side pieces polished, with a few weak punctures. Mesopleurum with strong punctures except callus convex, impunctate. Fore wing with the discoidal cell very weakly outlined by pigmented lines. Subgenital plate subtruncate apically. Genitalia as shown in Figure 19, differing from those of *funnebris* only in having the parameres slightly longer and more strongly bent mesad apically.

Paratype.—BOLIVIA: 1 ♂, Buenavista, near Santa Cruz, 1928 (J. Steinbach) [MCZ].

Variation.—The paratype is very slightly smaller, the fore wing measuring 4.8 mm.; OOL is only 1.15 X WOT. Otherwise there is close agreement with the type in most details. The paratype lacks antennae and all of the abdomen beyond segment two.

14. APENESIA PALLIDICORNIS new species

Holotype. — ♂, BRAZIL: Santarem (no further data) [CM].

Description of type. — Length 6.2 mm.; LFW 4.2 mm. Head and thorax black, abdomen dark brown except suffused with lighter brown on sides of basal segment and at extreme tip; palpi straw-colored; mandibles straw-colored except black at extreme base, rufous at apex; antennae light castaneous except scape infuscated on outer side and apical segments of flagellum somewhat infuscated; tegulae testaceous; front coxae black, legs otherwise straw-colored; wings subhyaline, veins and stigma dark brown. Mandibles with five teeth (as figured for *funebis*, Fig. 25). Clypeus broadly truncate apically, sides of truncation rounded; median ridge moderately high, abruptly declivous subapically, forming a very weak median tooth on the margin; margin linear as seen from below, not triangular. First four antennal segments in a ratio of about 18:4:13:12, segment three 2.8 X as long as wide, segment eleven 3.8 X as long as wide; pubescence pale, erect, longest setulae of segment eleven nearly as long as width of segment. Front polished, non-alutaceous, punctures well-defined though rather small, separated for the most part by more than their own diameters. Head about as wide as high; inner orbits strongly convergent below, WF .50 X WH, .87 X HE. Vertex broadly rounded off a short distance above eye tops, distance from eye tops to vertex crest equal to about half HE. Ocelli of moderate size, DAO .21 X WF; anterior ocellus on a line drawn between eye tops; OOL 1.10 X WOT. Pronotum rather long, without depressions or ridges, smooth, polished, punctures rather small and well spaced. Mesoscutum polished, nearly impunctate, notauli very strong, not quite reaching anterior or posterior margins; center of scutellar disc impunctate. Propodeal disc 1.15 X as wide as long; lateral, sublateral, median, and posterior carinae all strong and complete; disc with a basal triangle filled with longitudinal carinae, smooth and polished along sides of triangle, then transversely striate along the sides and posteriorly. Mesopleurum polished, largely impunctate posteriorly and on the large, convex callus. Fore wing with discoidal cell only very faintly indicated by pigmented lines. Subgenital plate broadly truncate. Genitalia (Fig. 21) nearly identical to those of *flammicornis*, differing chiefly in having a more prominently projecting lobe midway along the inner margin of the parameres.

Remarks. — This species is known only from the type.

15. *APENESIA PHOTOPHILA* (Ogloblin) new combination

Pristocera photophila Ogloblin, 1930, Rev. Soc. Ent. Argentina, 3: 20-23, Figs. 14-22. [Type: ♂, ARGENTINA: Loreto, Misiones, March 1928 (at light, A. Ogloblin) (location not known to writer); paratype: ♂, same data as type (MCZ)].

Description of topotypic paratype.—Length 9 mm.; LFW 6.5 mm. Head and thorax shining black; abdomen rufo-castaneous except first tergite black at base and center, second tergite with small black lateral spots, and apical 2.5 tergites more or less infuscated; mandibles straw-colored, the teeth dark; scape black, flagellum rufo-castaneous, weakly infuscated apically; tegulae dark brown; coxae black, femora dark brown except tips paler, tibiae medium brown except paler apically, tarsi light yellowish brown; wings hyaline, veins and stigma brown. Mandibles with four strong teeth in an oblique series, no evidence of a small tooth between basal two teeth. Clypeus broadly truncate, sides of truncation rounded; median carina strong, arched in profile. First four antennal segments in a ratio of about 23:5:17:17, segment three 2.2 X as long as thick, segment eleven about 4 X as long as thick; pubescence dense, suberect, setulae of segment eleven about half as long as width of segment. Front polished, non-alutaceous, punctures very strong, separated by about or slightly less than their own diameters, more sparse medially and above. Eyes large, bulging from sides of head; head wider than high, WH 1.08 X LH; front narrow, WF .55 X WH, 1.06 X HE. Ocelli very large, ocellar triangle distinctly elevated; DAO .28 X WF; OOL .54 X WOT, only 1.5 X diameter of a lateral ocellus. Vertex broadly rounded off a distance above eye tops equal to slightly more than half HE; an imaginary line drawn between eye tops touching upper margin of anterior ocellus. Pronotum shaped about as in *funebria* (Fig. 53), with only a faint indication of a transverse depression; surface polished, with strong punctures which tend to be smaller and more crowded anteriorly. Mesoscutum polished, sparsely punctate, notauli very deeply impressed; scutellar disc covered with small punctures. Propodeal disc measuring about as wide as its median length, with complete lateral and posterior carinae, but sublaterals absent and median carina indistinct, represented mostly by a very weak elevation crossed by some weak striae, on the posterior fifth entirely absent; disc with a few short basal carinae, but otherwise smooth and strongly polished; declivity and side pieces also smooth and polished. Mesopleurum strongly polished, rather weakly punctate. Fore wing with the discoidal and subdiscoidal veins weakly pigmented, the latter weakly

continuous to near wing margin, discoidal cell weakly closed off apically. Subgenital plate slightly emarginate. Genitalia with the parameres almost exactly as figured for *pallidicornis* (Fig. 21), the ventral arm of the digitus broader basally than in that species, subtriangular; inner margin of volsella with a finger-like lobe, as in the preceding three species; aedoeagus much as figured for *flammicornis* except the apical lobes produced laterally rather than mesally (see Ogloblin's fig. 22).

Remarks.—This is a large and striking species. I am much indebted to Dr. Ogloblin for depositing a paratype at the MCZ. The species is closely related to *pallidicornis* and *flammicornis*, but the ocelli, which are very slightly enlarged in those two species, are here enormously enlarged, as in some species of *Pseudisobrachium*.

EXILIS SPECIES-GROUP

To this group belong four minute species all occurring in southern United States, three of them in the Southwest. All have narrow heads, five-toothed mandibles, a clypeal margin which is weakly to strongly obtusely angulate, and an unmarginated propodeal disc. Three of the species have the head and thorax alutaceous and barely punctate, the ocellar triangle broad, the pronotum short, and several other features in common. The fourth species, *pima*, differs in many features from the other three and may represent a link with the preceding two species-groups. Species such as *exilis* are remarkably suggestive of the genus *Pseudisobrachium* in their body form and alutaceous integument, and some of them are nocturnal like many species of that genus. The resemblances may be the result of convergence, as the genitalia are quite different, and there are important differences in the clypeus, eyes, antennae, and occipital carina. See Table IV and Plates 3 and 4 for summary and illustrations of some of the characters of members of this group.

TABLE IV. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF EXILIS,
DISSOMPHALOIDES, AND LAEVIGATA GROUPS

Species	LFW (mm.)	WH/LH	WF/HE	OOL/WOT	DAO/WF	Ant. 11 L/W	No. teeth mandibles
16. <i>pima</i>	1.9	0.90	1.35	1.35	.18	2.0	5
17. <i>exilis</i>	1.8	0.89	1.00	0.85	.22	2.5	5
18. <i>martini</i>	2.2	0.87	1.00	1.00	.20	2.5	5
19. <i>cochise</i>	1.8	0.94	1.20	1.15	.16	2.2	5
20. <i>dissomphaloides</i>	2.2	0.98	1.20	0.95	.21	2.0	3
21. <i>denticulata</i>	1.8	1.03	1.20	1.20	.18	1.5	4
22. <i>pallidula</i>	2.1	0.90	1.17	1.25	.21	2.2	5
23. <i>crenulata</i>	2.4	0.97	0.90	1.27	.20	3.0	5
24. <i>laevigata</i>	2.9	1.07	1.30	1.12	.17	1.9	5

16. APENESIA PIMA new species

Holotype. — ♂ ARIZONA: Tucson, 26 Aug. 1939 (R. H. Crandall) [MCZ, No. 30436].

Description of type. — Length 2.3 mm.; LFW 1.9 mm. Body wholly rich castaneous, shining, head somewhat darker than thorax and abdomen; palpi straw-colored; mandibles dark at base, apical two-thirds yellowish brown; antennae yellowish brown except scape and apical few flagellar segments weakly infuscated; tegulae testaceous; front coxae dark castaneous, legs otherwise light brown except paler at the joints and the front tibiae and all the tarsi almost straw-colored; wings hyaline, with pale setulae, stigma light brown, veins almost colorless. Mandibles with five teeth, fourth tooth smaller than the others (Fig. 31). Apical margin of clypeus convex, actually obtusely subangulate (Fig. 35), median ridge strong, in profile strongly arched, rather abruptly declivous to the margin. First four antennal segments in a ratio of about 14:5:6:6, segment three and segment eleven each about twice as long as thick; pubescence coarse, semi-erect, longest setulae of segment eleven about two-thirds as long as width of segment; erect setae sparse, not standing above the pubescence. Front strongly polished, non-alutaceous, punctures small but well-defined, separated by 3.5 X their own diameters. WH .90 X LII; inner orbits converging below, WF .62 X WH, 1.35 X HE; vertex extended far above eye tops, distance from eye tops to vertex crest subequal to eye height, top of vertex nearly straight across. DAO .18 X WF; front ocellus far above a line drawn between tops of eyes; hind ocelli removed from occipital carina by much more than their own diameters; front angle of ocellar triangle much less than a right angle; OOL 1.35 X WOT, OOL subequal to HE. Pronotum of moderate length (Fig. 54), disc nearly flat, polished and with small but distinct punctures. Mesoscutum rather short, with strong, rather wide notauli which diverge strongly toward the front; surface of scutum and scutellum strongly polished, weakly punctate; groove at base of scutellum gently curved, moderately wide. Propodeum about 1.2 X as long as wide, its dorsal surface somewhat wider than long, but difficult to measure since the disc is not margined behind, but slopes evenly into the declivity; base with several short, irregular longitudinal carinae, the median carina somewhat stronger than the others but extending for only half the length of the disc; posterior part of disc polished, with a few punctures; declivity with weak sculpturing; lateral carinae distinct. Mesopleurum strongly polished,

weakly punctate; callus convex, subtended by a large pit. Fore wing with transverse median vein weakly arched, discoidal vein completely absent; basal vein meeting subcosta relatively close to base of stigma. Abdomen slender, sessile (Fig. 36). Subgenital plate shallowly emarginate apically, in general similar to that of *cochise* (Fig. 32). Genitalia (Fig. 26) with the parameres expanded apically on the mesal margin; inner margin of volsella slightly produced just below the cuspis; aedoeagus closely consolidated, with a pair of pointed apical lobes, the apex lacking the pectinations of the other members of this species-group.

Remarks.—The genitalia of this species bear considerable resemblance to those of *columbana*, while the shape of the pronotal disc suggests the *pilicornis* group. It is possible that *pima* represents something of a link between these groups and the more specialized members of the *exilis* group.

17. APENESIA EXILIS new species

Holotype.—♂, ARIZONA: [Pinal Co., Boyce Thompson Southwestern Arboretum, 4 mi. W. of] Superior, 3 Oct. 1949 (light trap, B. W. Benson) [INHS].

Description of type.—Length 2.2 mm.; LFW 1.8 mm. Head dark brown, thorax and abdomen medium brown; palpi straw-colored; mandibles light brown; antennae wholly and uniformly light brown; tegulae testaceous; legs light brown except tibiae and tarsi straw-colored; wings hyaline, with pale setulae, stigma light brown, veins nearly colorless. Mandibles short, much broadened apically, with five sharp teeth (Fig. 30). Clypeus obtusely angulate apically except medially with a sharp tooth which is formed by an extension of the median carina, the latter very strong, subangulate in profile (Fig. 34). First four antennal segments in a ratio of about 30:9:14:14, segment three 2.1 X as long as thick, segment eleven 2.5 X as long as thick; pubescence coarse, semi-erect, longest setulae of segment eleven slightly more than half as long as width of segment, erect setae sparse, standing somewhat above the pubescence. Front moderately shining, uniformly alutaceous, punctures minute and hardly noticeable. Head longer than wide, WH .89 X LH; inner orbits weakly convergent below, WF .55 X WH, subequal to HE. Ocelli slightly enlarged, DAO .22 X WF; ocelli in a broad triangle, front angle slightly greater than a right angle, OOL .85 X WOT; anterior ocellus far above a line drawn between eye tops, posterior ocelli removed from occipital carina

by less than their diameters. Vertex produced above eye tops a distance equal to about .8 X HE. Pronotum short (Fig. 55) sloping up strongly from the collar, without carinae or grooves, somewhat shining although alutaceous, obscurely punctate. Mesonotum also alutaceous, moderately shining, punctures scarcely noticeable; notauli complete although very weakly impressed; parapsidal furrows weak except on posterior .2 of sentum. Propodeum about 1.25 X as long as wide, its dorsal surface about as long as wide although not at all margined behind and therefore difficult to measure accurately; lateral carinae developed, but all other carinae, including median carina, absent; spiracles circular, relatively large, directed laterad. Mesopleurum shining, weakly alutaceous, callus not well differentiated. Middle tibiae not spinose; claws weakly dentate. Fore wing with the transverse median vein arched, the discoidal vein arising well down on it although unpigmented and barely visible; basal vein reaching subcosta far basad of stigma. Abdomen fusiform, depressed, sessile. Subgenital plate rather strongly, arcuately emarginate (Fig. 33). Genitalia (Fig. 28) with the parameres not strongly lobed on the mesal margin, strongly setose; volsellae with the cuspis very slender, the ventral arm of the digitus small; aedeagus very large, closely consolidated, with some small though strong peetinations at the apex mesally.

Paratypes. — ARIZONA: 4 ♂♂, same data as type except three of them 11 July-5 Aug. 1948 (H. K. Gloyd) [MCZ, INHS, USNM]. CALIFORNIA: 1 ♂, Bard, Imperial Co., 1959 (H. H. Blakemore) [CDAS].

Variation. — The paratypes vary slightly in size (LFW 1.6-2.0 mm.). Some members of the Arizona series are paler than the type, having the entire body light brown, while the California specimen is wholly dark brown, the head nearly black, although with the legs and antennae testaceous. In the California specimen WF is subequal to HE, OOL .82 X WOT. In the Arizona paratypes, WF varies from .90 to 1.0 X HE, OOL from .70 to .85 X WOT.

Remarks. — This species bears a striking similarity to *Pseudisobrachium obscurum* Evans, a sympatric and also a nocturnal species.

18. APENESIA MARTINI new species

Holotype. — ♂, FLORIDA: Manatee Co., Oneco, 21 March 1955 (John C. Martin) [CNC].

Description of type.—Length 2.6 mm.; LFW 2.2 mm. Body dark castaneous, head nearly black; palpi straw-colored; mandibles dark basally, suffused with reddish brown apically; antennae uniformly dark brown except segment two light brown and basal segment light brown basally and apically; tegulae brown; coxae and femora medium brown, legs otherwise light brown; wings hyaline, stigma brown, veins almost colorless. Mandibles with five sharp teeth, as in *exilis* (Fig. 30). Clypeus broadly rounded, weakly obtusely angulate medially, tectiform, the median elevation weakly arched in profile. First four antennal segments in a ratio of about 18:5:8:8, segment three slightly over twice as long as thick, segment eleven 2.5 X as long as thick; pubescence pale, coarse, semi-erect, longest setulae of segment eleven nearly as long as width of segment; fully erect setae numerous, but not extending above the pubescence. Front moderately shining, uniformly alutaceous, punctures so small and sparse as to be scarcely noticeable. Head much longer than wide, WH .87 X LH; front narrow, inner orbits convergent below, WF .54 X WH, subequal to HE. Ocelli enlarged only slightly, DAO .20 X WF; ocellar triangle broad, front angle slightly greater than a right angle; OOL about equal to WOT; anterior ocellus far above eye tops, posterior ocelli separated from occipital carina by less than their own diameters. Vertex produced above eye tops a distance nearly equal to eye height. Pronotum short, though with a narrow anterior median lobe, disc with smooth contours except for a very shallow transverse depression toward the front margin. Surface of pronotum, like that of mesonotum, alutaceous, somewhat shining, obscurely punctate. Notauli very weakly indicated on the posterior half; groove at base of scutellum unusually slender, linear, deflected backward at sides. Propodeum elongate, about 1.5 X as long as broad, dorsal surface about 1.2 X as long as broad; median carina weakly indicated on basal half, disc otherwise polished, weakly alutaceous; declivity weakly transversely striate, the upper striae tending to margin the disc behind weakly; lateral carinae present though weak; spiracles circular, directed laterad, relatively large. Thorax, in lateral view, seen to be strongly depressed; mesopleurum slender, almost horizontal, its features as in the preceding species. Fore wing with discoidal vein indicated as a weak streak arising well down on transverse median vein, the latter strongly arched; basal vein reaching subcosta far basad of stigma. Subgenital plate broadly, arcuately emarginate, about as figured for *exilis* (Fig. 33). Genitalia (Fig. 29)

differing from those of *exilis* only in minor details, the ventral arms of the digiti being broader than in that species, the aedoeagus somewhat less robust and with the apical pectinations much weaker.

Remarks. — This species is named for its collector, the late Dr. John C. Martin, a good friend and a fine young hymenopterist.

19. APENESIA COCHISE new species

Type. — ♂, ARIZONA: Cochise Co., Southwestern Research Station, 5 mi. W. Portal, 5400 feet, 13 Sept. 1959 (on honeydew on *Populus*, H. E. Evans) [MCZ, No. 30438].

Description of type. — Length 2.3 mm.; LFW 1.8 mm. Entire body dark brownish-fuscous; palpi brown; mandibles blackish, teeth rufous; antennae wholly dark brownish-fuscous; tegulae dark brown; legs dark brownish-fuscous except tarsi medium brown; wings hyaline, with dark setulae, stigma brown, veins amber-colored. Mandibles short and broad, with five sharp apical teeth (as in *exilis*, Fig. 30). Clypeus obtusely angulate apically, about as described and figured for *exilis* (Fig. 34); median carina weakly arched in profile. First four antennal segments in a ratio of about 14:5:6:6, segment three twice as long as thick, segment eleven about 2.2 X as long as thick; pubescence pale, semi-erect, longest setulae of segment eleven two-thirds as long as width of segment; erect setae numerous, standing somewhat above the pubescence. Front moderately shining, uniformly and rather strongly alutaceous, punctures minute and scarcely noticeable. Head longer than wide, WH .94 X LH; front of moderate width, WF .60 X WH, 1.20 X HIE. Ocelli not enlarged, DAO .16 X WF; front angle of ocellar triangle equal to about a right angle; OOL 1.15 X WOT; anterior ocellus far above a line drawn between eye tops, posterior ocelli removed from occipital carina by a distance about equal to their own diameters. Vertex produced above eye tops a distance nearly equal to HIE. Pronotum short, disc with smooth contours, narrow in front and much broadened behind. Pronotal disc like that of mesonotum, moderately shining, alutaceous, obscurely punctate. Notauli linear but strongly impressed, diverging in front, running the full length of the mesoscutum. Propodeum 1.25 X as long as wide, its dorsal surface about as wide as long; median carina distinct for about .6 the length of the dorsal surface, paralleled by several rather weak and irregular carinae; lateral carinae strong; major part of disc

polished, smooth, weakly alutaceous; declivity transversely striate, the uppermost stria tending to margin the disc behind rather weakly; spiracles circular, directed laterad. Thorax in lateral view rather depressed; mesopleurum elongate, somewhat shining, weakly alutaceous, with a pit in the center but no well defined callus. Fore wing with the transverse median vein strongly arched, the discoidal vein appearing as a very faint streak arising well down on it; basal vein reaching subcosta far basad of stigma, the latter unusually large. Subgenital plate (Fig. 32) shallowly emarginate, the plate itself longer than in *exilis*. Genitalia (Fig. 27) with both parameres and aedoeagus much more slender than in *exilis*, though basically rather similar; apical lobes of aedoeagus directed ventrad, dorsally with some strong pectinations.

Remarks. — This species is very similar to *exilis* in most respects, but differs in having the notauli strong, the propodeum with several delicate median carinae, and the ocelli small and more distant from the eyes.

DISSOMPHALOIDES SPECIES-GROUP

Eyes wholly covered with short hairs; mandibles with three or four teeth; clypeus large, tridentate, shaped much as in *Dissomphalus*; inner orbits weakly convergent below; pronotum with smooth contours, ecarinate; propodeum with a median carina but with no evidence of a transverse carina behind; middle tibiae not spinose; abdomen sessile, rather short and broad; parameres simple, not lobed; digiti simple, not divided or setose; aedoeagus broad, with a pair of slender ventral rami and a pair of very large dorsal apical lobes which are fringed on their inner margins.

The two species assigned here are remarkably *Dissomphalus*-like, but lack the characteristic tergal pits of that genus and also lack a transverse carina on the propodeum. They may well represent a link between the *exilis*-group of *Apenesia* and the genus *Dissomphalus*. The range of the group extends from Arizona to eastern Mexico. See Table IV and Plate 4 for summary and illustrations of some of the characters of this group.

20. APENESIA DISSOMPHALOIDES new species

Holotype. — ♂, ARIZONA: Pinal Co., Superior, 17-24 May 1946 (light trap, H. K. Gloyd) [INHS].

Description of type.—Length about 2.5 mm.; LFW 2.2 mm. Head and thorax dark castaneous, abdomen medium brown, shining; palpi straw-colored; mandibles light brown; antennae uniformly very light brown; legs light brown, like the antennae, except front coxae dark brown; wings hyaline, veins and stigma brownish. Mandibles slender, with three teeth. Clypeus large for the genus, especially laterally, medially with three small, rounded teeth (Fig. 42); median carina well defined but low, not arched in profile. First four antennal segments in a ratio of about 37:11:15:15; segment three and segment eleven each about twice as long as thick; pubescence rather coarse, setulae of segment eleven about .6 as long as width of segment; erect setae fairly numerous, extending well above the pubescence. Front uniformly alutaceous, moderately shining, punctures small, inconspicuous; eyes covered with sparse, short hairs; occipital carina rather weak dorsally. Head very slightly higher than wide, WH .98 X LH; front narrow, inner orbits convergent below, WF .58 X WH, 1.20 X HE; vertex broadly rounded off far above eye tops, distance from eye tops to vertex crest subequal to eye height. DAO .21 X WF; front angle of ocellar triangle approximately a right angle; OOL .95 X WOT. Thoracic dorsum wholly alutaceous like the head, moderately shining, obscurely punctate; pronotum rather short, with smooth contours; notauli distinct on anterior .8 of mesoscutum; basal groove of scutellum slender. Propodeum 1.3 X as long as wide; median carina well defined, basal triangle reticulate; posterior part of disc as well as declivity smooth and polished; transverse carina completely lacking. Mesopleurum wholly alutaceous although somewhat shining, callus not strongly differentiated. Fore wing with basal vein erect, reaching subcosta far basad of stigma; transverse median vein erect, nearly straight; discoidal vein nearly interstitial with median vein, weakly pigmented for a distance about equal to basal vein. Subgenital plate short, truncate apically. Genitalia as shown in Figure 37; parameres strongly curved mesad, slender and not lobed; digiti simple, non-setose, rather large, strongly curved; aedoeagus broad, with large apical lobes which are prominently fringed on their inner margins, also with a pair of elongate, unbranched ventral rami.

21. *APENESIA DENTICULATA* new name

Propristocera tridentata Evans, 1958, Proc. Ent. Soc. Wash., 59: 292-293.

[Type: ♂, MEXICO: VERACRUZ: Cordoba, 21 May (A. Fenyés) (USNM, no. 64115)]. Preoccupied by *Apenesia tridentata* Kieffer, 1910, Ergeb. Zentr.-Afr. Exp., v. 3, fasc. 2, p. 16.

Description of type.—Length about 2 mm.; LFW 1.8 mm. Body uniformly rich castaneous; mandibles and side of clypeus light brown; first two abdominal segments yellowish brown, remainder of antennae dark brown; legs wholly light yellowish brown except front coxae dark brown; wings hyaline, veins and stigma brown. Mandibles broader than in the preceding species, with four apical teeth. Clypeus with three rather sharp teeth medially, median carina strong, in profile almost angulate just before the apex. First four antennal segments in a ratio of about 17:6:4:5, segment three and eleven each about 1.5 X as long as thick; pubescence coarse, pale, semi-erect, setulae of segment eleven .8 as long as width of segment; erect setae numerous, standing well above pubescence. Front alutaceous although rather strongly shining, punctures shallow and inconspicuous; eyes short-haired. Head broader than high, WH 1.03 X LH; inner orbits weakly convergent below, WF .57 X WH, 1.20 X HE; distance from eye tops to vertex crest equal to about two-thirds HE. Ocelli not notably enlarged, DAO .18 X WF; front angle of ocellar triangle slightly less than a right angle; OOL 1.2 X WOT. Thoracic dorsum alutaceous although shining, punctures weak; pronotum of moderate length, with smooth contours; notauli distinct on anterior two-thirds of mesoscutum. Propodeum 1.25 X as long as wide, its features much as in the preceding species. Mesopleurum weakly alutaceous, shining, the callus not strongly differentiated. Fore wing as in *dissomphaloides* except that the discoidal vein is pigmented for a distance distinctly greater than length of basal vein. Subgenital plate weakly arcuately emarginate apically. Genitalia resembling those of *dissomphaloides* in most respects, but the digiti not quite as strong and the ventral rami of the aedoeagus distinctly branched (see fig. 5 in Evans, 1958).

Other males examined.—MEXICO: VERACRUZ: 2, Cordoba, 3 May 1906 and 11 May 1908 (A. Fenyes) [USNM, MCZ].

Variation.—One of these specimens approximates the type in size, while the other is smaller (LFW 1.6 mm). This very small specimen has the head and thorax more weakly alutaceous than in the other two, but all three specimens are alike in color and show only slight variation in structure and standard measurements.

LAEVIGATA SPECIES-GROUP

To this group belong three minute, slender, shining species, all possessing a relatively long abdominal petiole. In all three

the propodeal disc is margined behind only on the sides and the ocelli are slightly enlarged. In other respects the group seems to stand close to *exilis* and its allies, although there is little resemblance between the genitalia of the two groups. The three species of this group are each known from a single specimen; one is from Arizona, one from Mexico, and one from Brazil. Some of the characters of the species of this group are illustrated on Plate 4 and tabulated in Table IV.

22. APENESIA PALLIDULA new species

Holotype. — ♂, ARIZONA: Cochise Co., Chiricahua Mts., 3 July 1947 (L. D. Beamer) [KU].

Description of type. — Length 2.5 mm.; LFW 2.1 mm. Head and thorax rich castaneous, shining; abdomen slightly paler than head and thorax, especially basal segments, also shining; apical half of mandibles yellowish brown; antennae wholly yellowish brown; legs straw-colored, coxae and femora suffused with brownish; wings hyaline, veins and stigma light brown. Mandibles with five small teeth in an oblique series (Fig. 50). Clypeus rounded apically, with a median angulation (Fig. 46); median carina strong, arched in profile. First four antennal segments in a ratio of about 15:5:12:10, segment three about 2.5 X as long as thick, segment eleven about 2.2 X as long as thick; pubescence coarse, suberect, longest setulae of segment eleven about .7 X as long as width of segment. Front polished, non-alutaceous, punctures large although shallow, separated by (on the average) about twice their own diameters. Head much higher than wide, WH .90 X LH; eyes weakly convergent below, WF .60 X WH, 1.17 X HE; vertex broadly rounded, distance from eye tops to vertex crest equal to .8 X HE. Ocelli enlarged slightly, DAO .21 X WF; front angle of ocellar triangle less than a right angle; OOL 1.25 X WOT. Pronotum moderately long, with smooth contours except weakly depressed just before posterior margin; disc shining, obscurely punctate. Mesoscutum polished, punctures small, notauli strong and complete; scutellum polished, disc slightly convex, basal groove slightly expanded and directed backward on each side. Propodeum 1.4 X as long as wide; disc without a transverse carina behind except on extreme sides; lateral carinae strong, median carina strong but not reaching edge of declivity; basal triangle of disc filled with irregular carinae which diverge from the median line; posterior

part of disc smooth and shining. Mesopleural callus well differentiated, convex and strongly polished. Claws weakly dentate; middle tibiae not spinose. Fore wing with discoidal and subdiscoidal veins absent. Abdominal petiole moderately long (Fig. 43). Subgenital plate truncate apically. Genitalia (Fig. 38) with the parameres slender, angularly bent mesad; ventral arms of digiti short, exceeded by the conspicuous dorsal arms, both arms weakly setose; aedoeagus with large, rather simple apical lobes.

Remarks. — This striking species is known only from the type.

23. APENESIA CRENULATA (Kieffer) new combination

Propriocera crenulata Kieffer, 1910, Ann. Soc. Ent. France, 78: 289-290.

[Type: ♂, BRAZIL: Pará (C. F. Baker) (Pomona College, Claremont, Calif.)]. — Kieffer, 1914, Das Tierreich, 41: 486-487.

Description of type. — Length 3.4 mm.; LFW 2.4 mm. Head black, thorax and abdomen shining dark reddish brown, first abdominal tergite margined with paler brown; mandibles rufo-castaneous; scape brown basally, apical third yellowish brown like the following two segments, antenna medium brown beyond segment three; tegulae and legs testaceous, including all coxae; wings hyaline, setulae dark, veins and stigma brown. Mandibles rather slender, terminating in five teeth (much as figured for *pallidula*, Fig. 50). Clypeus with its sides approaching evenly to an obtusely angulate apex, the midpoint very slightly more acute (Fig. 45); median earina very strongly arched in profile. Antennae elongate, first four segments in a ratio of about 23:6:18:17, segment three about 3 X as long as thick, segment eleven also 3 X as long as thick though slightly shorter and more slender than three; flagellar setulae semi-erect to erect, all of one type, setulae of segment eleven .8 X as long as width of segment. Front shining, non-alutaceous, punctures large, separated by somewhat more than their own diameters; vertex rather weakly punctate, median portion of underside of head almost impunctate. Head slightly higher than wide, WH .97 X LH; eyes convergent below, WF .52 X WH, 0.9 X HE; vertex evenly rounded, distance from eye tops to vertex crest equal to somewhat less than half HE. Ocelli somewhat large in relation to width of front, DAO .20 X WF; front ocellus touching a line drawn between eye tops; ocellar triangle compact, front angle less than a right angle; OOL 1.27 X WOT. Pronotum short, smooth and highly polished, without a transverse carina anteriorly, very weakly depressed before posterior margin; disc

with weak, well-separated punctures. Mesonotum wholly polished, non-alutaceous, almost impunctate; notauli very strong, diverging evenly toward the front, absent on anterior .05 and posterior .05 of mesoscutum; basal groove of scutellum narrow and deep. Propodeum 1.4 X as long as wide; lateral carinae strong; median basal area strongly reticulate, almost foveolate, but without a well-defined median carina; remainder of disc weakly and irregularly transversely striate, one of the striae on the edge of the declivity stronger than the others (on the sides, at least) and thus weakly margining the disc behind. Mesopleurum polished, non-alutaceous, callus strongly convex, margined below and in front by a broad, foveolate groove. Claws weakly dentate. Fore wing with discoidal vein only very weakly indicated, interstitial with media; transverse median vein straight, erect. Abdomen with a rather long petiole (about as in Fig. 43). Subgenital plate truncate apically. Genitalia not studied.

Remarks.— This species seems closely related to the preceding despite the great geographic gap between them. It is known only from the type.

24. *APENESIA LAEVIGATA* (Evans) new combination

Propristocera laevigata Evans, 1958, Proc. Ent. Soc. Wash., 59: 293. [Type: ♂, MEXICO: VERACRUZ: Cordoba, 21 May (A. Fenyès) (USNM no. 64114)].

Description of type.— Length 3.4 mm.; LFW 2.9 mm. Body entirely castaneous, shining; mandibles testaceous; basal two antennal segments testaceous, rest of antenna medium brown; legs wholly testaceous; wings subhyaline, veins and stigma brownish. Mandibles with five sharp teeth in an oblique series. Clypeus with a prominent median lobe, the sides oblique, the apex weakly notched (Fig. 47); median carina very strong, weakly arched in profile. First four antennal segments in a ratio of about 20:5:8:8, segment three 1.7 X as long as thick, segment eleven nearly twice as long as thick; pubescence pale, semi-erect, longest setulae of segment eleven .7 as long as width of segment; last three segments with dense, short pubescence on under side. Front convex, strongly polished, punctures minute and well separated. Eyes strongly bulging from sides of head, WH 1.07 X LH; WF .60 X WH, 1.3 X HE. Ocelli of moderate size, DAO .17 X WH; OOL 1.12 X POL. Vertex narrowly rounded off far above eye tops. Pronotum short, sloping evenly, smooth

and shining. Mesoscutum strongly polished, weakly punctate; notauli complete but weakened anteriorly and posteriorly; scutellar disc strongly polished, lateral foveae unusually large and deep. Propodeal disc about as long as wide, with the median carina replaced by a rather deep median groove which is weakened behind; lateral carinae strong, transverse carina present only on sides; surface of disc polished except weakly sculptured in basal triangle. Mesopleurum strongly polished, the callus ill-defined. Middle tibiae not spinose; claws simple. Fore wing with the discoidal vein arising far down on transverse median vein, fairly strong, but subdiscoidal vein absent (see fig. 4 in Evans, 1958). Abdomen with a relatively long petiole (Fig. 44). Spiracles of first two tergites relatively large, round. Subgenital plate broadly, weakly rounded apically. Genitalia with the parameres very long and slender, nearly straight, with a small accessory lobe at the base laterally; aedoeagus complex, lateral apical lobes directed strongly ventrad (see fig. 8 in Evans, 1958).

Remarks. — This striking species is known only from the type.

MEXICANA SPECIES-GROUP

To this group are assigned twelve species which together range from southwestern United States and Cuba to Brazil and Peru, with more than half the species occurring in Mexico and Central America. In this group the pronotum has a strong transverse carina in front. The abdomen is sessile, rather broadly so in most species, and the genitalia are characterized by broadly expanded parameres. The middle tibiae are spinose except in *bugabensis*, and this species is also unique in having a strong groove just before the posterior margin of the pronotum. The mandibles show much variation in this group and often provide good specific characters. The clypeus also shows much variation, but it is never broadly and abruptly truncate as in some groups.

This group properly occupies a central position in the genus, some species showing relationships to groups already considered, some to the more specialized groups to follow. For example, the grooved pronotum of *bugabensis* suggests certain species of the *columbana* group, the setose antennae of *peculiaris* the *pilicornis* group. On the other hand, the broad head and short, bidentate clypeus of *inca* strongly suggest the *nitida* group, and it must be admitted that the group as a whole can only be rather arbitrarily distinguished from the one which follows, the *brasiliensis* group. Some of the characters of species of this group are

summarized in Table V, and some are illustrated in Plates 5, 6, and 7.

TABLE V. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF MEXICANA GROUP

Species	LFW (mm.)	WH/LH	WF/HE	OOL/WOT	Ant. 11 L/W	Propodeal disc W/L	No. teeth mandibles
25. bugabensis	2.7	0.90	1.00	1.45	3.2	1.00	5
26. chiricahua	2.3	0.97	1.33	1.40	2.4	1.30	5
27. mohave	2.7	1.00	1.20	1.07	2.1	1.50	5
28. malinche	2.6	1.02	1.28	1.10	2.0	1.40	5
29. peculiaris	3.6	0.98	1.10	1.30	2.9	1.30	4
30. pando	2.8	1.00	1.06	1.22	3.0	0.95	4
31. cubensis	3.5	0.95	1.20	1.35	3.9	1.15	4
32. mexicana	3.0	1.04	1.10	1.20	2.4	1.35	4
33. testaceipes	3.6	1.03	0.90	0.95	3.0	1.20	3
34. maya	3.4	1.04	1.08	1.12	2.4	1.25	3
35. neotropica	3.7	1.00	1.00	1.13	2.8	1.03	3
36. inca	3.2	1.06	1.17	1.15	2.3	1.05	3

25. APENESIA BUGABENSIS (Cameron) new combination

Epyris bugabensis Cameron, 1888, Biol. Centr.-Amer., Hymen. I, p. 453, pl. 19, fig. 19. [Type: ♂, PANAMA: Bugaba (G. C. Champion) (BMNH)].

Rhabdepyris (*Rhabdepyris*) *bugabensis* Kieffer, 1914, Das Tierreich, 41: 362.

Description of type.—Length 3.8 mm.; LFW 2.7 mm. Head and thorax black; abdomen piceous, segments indistinctly annulated with light brown apically (first tergite more distinctly so), apical segment suffused with light brown in its entirety; palpi and mandibles straw-colored, the latter darkened at extreme base and apex; first two antennal segments and base of third yellowish brown, rest of antenna medium brown; tegulae testaceous; front coxae dark brown, legs otherwise light yellowish brown except femora rather strongly suffused with brown and middle and hind coxae weakly suffused with brown; wings subhyaline, veins and stigma brown. Mandibles with five teeth, the basal two partially fused (Fig. 68). Clypeus with a rounded median lobe, with a very weak median tooth which is formed by the end of the very strong, arching median carina (Fig. 83). First four antennal segments in a ratio of about 24:6:17:15, segment three 2.8 X as long as its maximum width, segment eleven 3.2 X as long as wide; pubescence pale, erect, bristling, longest setulae of segment eleven .7 as long as width of segment; there are no other erect setae which extend above the pubescence. Scape strongly curved, antennal scrobes margined by a strong carina passing transversely to the eye margins and strongly

arched for the reception of the scape. Head strongly polished, non-alutaceous; front with strong punctures which are separated by about 2-4 X their own diameters; vertex and temples with small, widely spaced punctures. Head higher than wide, WH .90 X LH; inner orbits converging below, WF .57 X WH, 1.00 X HE. Vertex rather narrowly rounded off a distance above eye tops equal to about two-thirds HE; occipital carina strong, visible at top of vertex when head is viewed from in front. Ocelli rather small, DAO .17 X WF; ocelli in a compact triangle, the front angle less than a right angle; anterior ocellus well above a line drawn between eye tops; OOL 1.45 X WOT. Pronotal disc moderately long, its sides slightly concave as seen from above; collar transversely rugulose; disc with a strong transverse carina at anterior margin and a strong transverse groove slightly before the posterior margin; disc polished, rather weakly punctate. Mesoscutum polished, punctures rather strong though well spaced; notauli strong, diverging anteriorly, not quite reaching posterior margin; scutellar disc polished, impunctate in the center. Propodeal disc elongate, about as wide as long, propodeum as a whole about 1.25 X as long as wide; lateral, sublateral, median, and posterior carinae all strong and complete, the posterior carina with a series of irregular foveae both in front of and behind it; disc with some short longitudinal carinae basally besides the median carina, weakly impressed so as to mark off a basal triangular area, otherwise densely transversely striate; declivity polished, weakly sculptured. Mesopleurum polished, weakly punctate, rather irregularly grooved and pitted. Middle tibiae not spinose. Fore wing with the discoidal cell very weakly outlined by pigmented lines. Abdomen slender basally but without a petiole (Fig. 79). Subgenital plate broadly rounded apically. Genitalia (Fig. 56) with the parameres slender, with a prominent mesal lobe apically; ventral arm of digitus margined with strong setae, smaller than the dorsal lobe; aedoeagus rather slender, with large apical lobes which are compressed and deflected ventrad.⁴

Other males examined.—COSTA RICA: 2, Turrialba, 14-16 June 1949 (K. W. Cooper) [USNM]; 1, LaLola, 29 April 1957 (R. D. Shenefelt) [USNM].

Variation.—The Turrialba specimens are very similar to the type in size, color, and structure. The LaLola specimen is

⁴ The description and figure of the genitalia were drawn from a specimen from Turrialba, Costa Rica, compared with the type and found to resemble it very closely. The genitalia of the type were not extracted.

smaller (LFW 2.2 mm.) and has the front more sparsely punctate. In all three Costa Rican specimens the front is very slightly wider than in the type, WF varying from 1.05-1.10 X HE.

26. *APENESIA CHIRICAHUA* new species

Holotype. — ♂, ARIZONA: Southwestern Research Station, 5 mi. W. of Portal, Cochise Co., 5400 feet, 23 Aug. 1959 (sweeping grass, H. E. Evans) [MCZ, No. 30439].

Description of type. — Length 3.4 mm.; LFW 2.3 mm. Black, margins of first two abdominal segments suffused with brown; palpi light brown; apical half of mandibles rufous; scape black, flagellum medium brown; tegulae brown; front coxae black, remaining coxae and all femora dark brown, legs otherwise light brown; wings subhyaline, veins and stigma brown. Mandibles with five teeth in an oblique series, third and fourth teeth partially connate (Fig. 69). Clypeus forming an obtuse angle apically (Fig. 84), strongly tectiform, median ridge weakly subangulate in profile. First four antennal segments in a ratio of about 19:6:11:10, segment three 2.5 X as long as thick, segment eleven 2.4 X as long as thick; pubescence light brown, semi-erect, setulae of segment eleven about .4 as long as width of segment; erect setae sparse, slightly surpassing pubescence. Front moderately shining, uniformly and fairly strongly alutaceous; punctures shallow, separated by 2-4 X their own diameters. Eyes with some short, weak hairs (about as in *disso-mphaloides*). Head slightly longer than high, WH .97 X LH; inner orbits converging below, WF .60 X WH, 1.33 X HE. Ocelli small, DAO .16 X WF; anterior ocellus well above a line drawn between eye tops; OOL 1.4 X WOT. Distance from eye tops to vertex crest nearly equal to HE; vertex very broad. Pronotum of moderate length, its sides approaching evenly toward the front; disc subfoveolate immediately behind the strong transverse carina; disc alutaceous, with shallow, widely-spaced punctures. Mesonotum also alutaceous, moderately shining, with weak, widely scattered punctures; notauli linear, complete. Propodeal disc about 1.3 X as wide as its median length; median carina complete; basal triangle strong reticulate, disc otherwise alutaceous; lateral carinae strong, sublateral carinae irregular; declivity and side-pieces strongly alutaceous. Mesopleurum alutaceous, obscurely punctate. Middle tibiae with a few spines. Fore wing with transverse median vein sloping,

discoidal vein weak, arising a short distance down on it; discoidal cell very weakly outlined. Abdomen sessile (Fig. 80). Subgenital plate weakly emarginate (Fig. 60). Genitalia (Fig. 57) with the parameres rather broad apically; ventral arm of digitus expanded and obliquely subtruncate apically; inner margin of volsella simple; aedocagus slender, with two pairs of apical lobes, the median pair short, semimembranous, clothed with minute spines.

Paratypes. — ARIZONA: 33 ♂♂, same data as type except dates from 7 to 29 August 1959 (all taken sweeping grass in the same small sandy area along Cave Creek) [MCZ, AMNH, CU, USNM, CAS]; 1 ♂, Grand Canyon, 3 Sept. 1921 [AMNH]. MEXICO: MEXICO: 2 ♂♂, Teotihuacan Pyramids, 5 June 1951, 3 July 1959, 7500 feet (H. E. Evans) [MCZ, CU].

Variation. — The 36 paratypes provide an interesting study in variation. The two specimens from central Mexico resemble the type very closely, but the clypeal carina is low and not angulate in profile and the punctures of the front rather strong; the genitalia are much as figured for the type except that the aedocagus is slightly more slender. The Grand Canyon specimen also has strong punctures on the front, but the clypeal carina is high, although evenly arched rather than subangulate as in the type; in this specimen the ventral arms of the digiti are somewhat more slender than in the type. The topotypic paratypes vary considerably in size (LFW 2.0-2.9 mm.), and in the smaller specimens the antennae are relatively shorter than in the type (third segment 2.2 X as long as thick, eleventh segment about twice as long as thick). There is some variation in the size of the punctures of the front, and in a few cases they are as large as in the Grand Canyon and the Mexican specimens. The clypeal carina may be angulate, strongly arched, or weakly arched in profile. There is much variation in the OOL/WOT ratio, in some specimens this figure approaching 1.0. The discoidal vein of the fore wing varies from fairly strong to almost absent, but in every case it arises a short distance down on the transverse median vein. I examined the genitalia of seven of the topotypic paratypes and found considerable variation. The parameres in six of these specimens are virtually identical to those of the type (Fig. 57), while the other specimen (Fig. 78) has more slender parameres, approaching the condition in *malinche*. Several specimens have very weak striations along the inner margin of the volsellae (much weaker than in *malinche*) and one specimen appears to have a small knob just at the base of the cuspis. Some

slight variation can be noted in the shape of the aedoeagus. One topotypic paratype has the subgenital plate rounded apically, much as in *mohave*.

The amount of variation in this series is disconcerting, and it is to be noted that much of the variation is in the direction of *malinche* and *mohave*. It should be noted that the aedoeagus of those two species is of rather different form, and the volsellae have a series of apical spines (at the base of the cuspis) which are strong in *malinche*, weaker in *mohave*.

27. APENESIA MOHAVE new species

Holotype.—♂, CALIFORNIA: Pine Flats Camp, Indio, 12 July 1941 (E. L. Todd) [KU].

Description of type.—Length 4 mm.; LFW 2.7 mm. Head and thorax black; abdomen dark brown, suffused with light brown on parts of basal segments; palpi straw-colored; mandibles pale castaneous except black at base and rufous at apex; antennae wholly bright, pale castaneous except apical three segments weakly infuscated; tegulae and narrow posterior rim of pronotum light brown; front coxae dark brown, remaining coxae and all femora medium brown, legs otherwise bright yellowish brown; wings subhyaline, veins and stigma brown. Mandibles exactly as in *chiricahua* (Fig. 69). Clypeus obtusely angulate apically, with a very high, strongly arched carina. First four antennal segments in a ratio of about 23:7:11:11, segment three 1.6 X as long as thick, segment eleven 2.1 X as long as thick; pubescence dense, golden, setulae of segment eleven about .4 as long as width of segment; erect setae sparse, inconspicuous. Front moderately shining, strongly alutaceous, punctures fairly strong, separated by from 1.5 to 3 X their own diameters. Eyes weakly hairy, as in *chiricahua*. Head about as wide as high; inner orbits converging below, WF .58 X WH, 1.20 X HE. Ocelli slightly enlarged, DAO .19 X WF; OOL 1.07 X WOT. Vertex broadly rounded, distance from eye tops to vertex crest nearly equal to HE. Characters of thoracic dorsum as described for *chiricahua*. Propodeal disc 1.5 X as wide as long, its characters as described for *chiricahua*. Mesopleurum alutaceous, weakly punctate; middle tibiae spined above. Fore wing with discoidal vein very weak, arising a short distance down on the transverse median vein. Abdomen stout, sessile. Subgenital plate weakly rounded apically, its basal stalk moderately wide (Fig. 61). Genitalia (Fig. 58) with the parameres slender apically; volsellae much as in

chiricahua but with a somewhat triangular, roughened lobe at base of cuspis; aedocagus simple, slender except broadened in the middle.

Paratype. — MEXICO: BAJA CALIFORNIA: 1 ♂, 10 mi. NW La Paz, 6 Oct. 1941 (Ross & Bohart) [CAS].

Variation. — The terminalia of the paratype closely resemble those of the type. This specimen is very small (LFW 2 mm.) and has the antennae infuscated beyond segment six, the scape also suffused with brownish. The head is longer than wide, WH .95 X LH; the third antennal segment is about twice as long as thick. In other respects the resemblance to the type is close.

28. APENESIA MALINCHE new species

Holotype. — ♂, MEXICO: PUEBLA: 10 mi. SE of Tehuizingo, 3900 feet, 3 July 1953 (Univ. Kansas Mexican Exp.) [KU].

Description of type. — Length 3.6 mm.; LFW 2.6 mm. Head and thorax black; abdomen dark brown, first tergite margined posteriorly with light brown, following two tergites more weakly annulated with light brown; palpi brown; mandibles blackish, apical half rufous; scape nearly black, flagellum dark brown, basal segments slightly paler than apical segments; tegulae dark brown; legs dark brown except front tibiae and all the tarsi light brown; wings subhyaline, stigma brown, veins amber. Mandibles with five teeth, basal three teeth small and close together. Clypeus forming an obtuse angle apically, median ridge arched in profile. First four antennal segments in a ratio of about 21:6:10:10, segment three 1.7 X as long as thick, segment eleven twice as long as thick; pubescence light brown, semi-erect, setulae of segment eleven about .4 as long as width of segment; erect setae very sparse, standing somewhat above the pubescence. Front shining although rather strongly alutaceous; punctures fairly large, separated by 3-4 X their own diameters except somewhat more crowded medially. Eyes with setae minute and inconspicuous. Head very slightly wider than high, WH 1.02 X LH; inner orbits converging below, WF .61 X WH, 1.28 X HE. Ocelli small, DAO .16 X WF; front angle of ocellar triangle less than a right angle; OOL 1.10 X WOT. Vertex very broad; distance from eye tops to vertex crest equal to about .8 X HE. Pronotum and mesonotum as in *chiricahua* except slightly more strongly punctate. Propodeal disc 1.4 X as wide as long; disc reticulate medio-basally, behind shining, weakly alutaceous;

median carina complete; posterior margining carina rather weak; lateral carinae well defined but sublaterals absent; declivity strongly alutaceous. Mesopleurum alutaceous, moderately shining, with weak punctures in front. Fore wing with discoidal vein very weak, interstitial with median vein. Middle tibiae with some strong spines above. Subgenital plate weakly emarginate, with a wide basal stalk (Fig. 62). Genitalia (Fig. 59) with the parameres moderately wide, wider than in *mohave* but narrower than in any specimen of *chiricahua* studied; volsella with a group of stout spines just below the cuspis, its mesal margin below somewhat striate; aedoeagus slender, of complex and characteristic structure.

Paratype.—MEXICO: PUEBLA: 1 ♂, same data as type [MCZ].

Variation.—The paratype is very slightly smaller than the type (LFW 2.4 mm.); it is very similar to the type in every respect, including the terminalia.

29. APENESIA PECULIARIS new species

Holotype.—♂, PANAMA: Barro Colorado Island, Canal Zone, 11 Feb. 1955 (C. Rettenmeyer) [KU].

Description of type.—Length 5.2 mm.; LFW 3.6 mm. Head and thorax black; abdomen brownish, each segment with a somewhat irregular apical annulation of light brown, apical three segments almost wholly light reddish brown; palpi very light brown; mandibles black basally, apical half light brown except teeth rufous; antennae castaneous except basal two-thirds of scape blackish, flagellum gradually infuscated apically; tegulae light brown; front coxae black; middle and hind coxae, front trochanters, and all femora dark brown; middle and hind trochanters and all tibiae and tarsi light brown; wings very lightly tinged with brownish, veins and stigma brown. Mandibles with four strong teeth (Fig. 70). Clypeus broadly rounded, median line weakly obtusely angulate, with a weak tooth formed by the extremity of the median carina, which is very high, in profile subangulate (Fig. 85). First four antennal segments in a ratio of about 30:9:17:15, segment three 2.4 X as long as thick, segment eleven nearly 3 X as long as thick; pubescence short, subappressed, setulae .2-.3 as long as width of segments bearing them; flagellum also with erect setae, slightly more numerous below than above, the longest of these nearly as long as width of segments bearing them. Front strongly polished, nonalutaceous,

strongly punctate, the punctures separated for the most part by about their own diameters; temples and vertex with punctures slightly more widely spaced, also very weakly alutaceous. Head very slightly longer than wide, WH .98 X LH; inner orbits convergent below, WF .55 X WH, 1.10 X HE. Vertex broadly rounded off well above eye tops, distance from eye tops to vertex crest equal to about .7 X HE. Ocelli of moderate size, DAO .17 X WF; OOL 1.3 X WOT; anterior ocellus above a line drawn between eye tops, posterior ocelli separated from vertex crest by slightly less than WOT. Pronotum of moderate length, its sides evenly convergent toward the front, anterior margin of disc with a strong transverse carina; disc otherwise smooth, polished, punctures strong, fairly close together except more sparse medially. Mesoscutum polished, with abundant small punctures, except sparsely punctate medially; notauli strong, not quite reaching anterior margin of mesoscutum; scutellar disc rather flat, impunctate medially. Propodeal disc short, 1.3 X as broad as long; lateral, median and posterior carinae strong and complete; sublateral carinae weakly indicated; disc with a basal triangular area filled with strong longitudinal carinae and some weaker transverse carinae, remainder of disc smooth and polished; posterior slope strongly rugulose, side-pieces with only weak sculpturing. Mesopleurum polished, punctate except on the rather large callus. Middle tibiae with a few spines above; claws strongly dentate. Fore wing with discoidal cell very faintly outlined by pigmented lines. Abdomen sessile (about as in *chiricahua*, Fig. 80). Subgenital plate with a broadly V-shaped apical emargination. Genitalia (Fig. 63) with large parameres which are covered with small setae dorsally but bare ventrally except along the margin; ventral arms of digiti large and strongly setose; aedoeagus rather broad, very complex, with two small tufts of setae at the apex.

Remarks.— This unusual species is known only from the type. The conspicuous erect setae on the antennae suggest the *pilicornis* group, with which this species may bear some relationship.

30. APENESIA PANDO new name

Plutobethylus percurrens Kieffer, 1910, Ann. Soc. Ent. France, 79: 52. [Type: ♂, BOLIVIA: Dept. Pando, Mapiri (Staudinger) (no date given) (Berlin Museum, no. 207)].—Kieffer, 1914, Das Tierreich, 41: 489. Preoccupied by *Propristocera percurrens* Kieffer, 1905, Bull. Soc. Metz, 24: 99 (♂, India).

Description of type.—Length 3.6 mm.; fore wing 2.8 mm. Head and thorax piceous, abdomen dark reddish brown except first tergite margined with light brown; mandibles light castaneous, teeth rufous; clypeus brownish; antennae light castaneous basally, gradually infuscated toward the apex; tegulae testaceous; coxae and femora light brown, rest of legs yellowish brown; wings hyaline, veins and stigma brown. Mandibles with four teeth in an oblique series, basal tooth somewhat more rounded than the others (Fig. 72). Clypeus prominent, its margin broadly rounded and with a series of about eight minute teeth, four on each side of the median line (Fig. 86); median carina strong, nearly straight in profile. First four antennal segments in a ratio of about 20:6:13:13, segment three 2.7 X as long as thick, segment eleven 3 X as long as thick; flagellar pubescence erect, bristling, setulae of segment eleven .8 as long as width of segment. Front, vertex, and temples shining, weakly and uniformly alutaceous, punctures very weak, separated by 2-4 X their own diameters. Inner margins of eyes weakly convergent below; WF .55 X WH, 1.06 X HE; vertex evenly rounded off well above eye tops, distance from eye tops to vertex crest about .8 X HE. Front angle of ocellar triangle less than a right angle; OOL 1.22 X WOT; ocelli not enlarged. Pronotum with collar not noticeably striate, but with some strong longitudinal striae on the side pieces; anterior face short, sloping obliquely upward to a strong, sharp transverse carina; disc behind the carina flat, smooth, weakly alutaceous and weakly punctate. Mesonotum also weakly alutaceous and weakly punctate. Propodeum elongate, about 1.3 X as long as broad, disc slightly longer than broad; disc margined with strong carinae laterally and behind and with a strong, complete median carina; disc wholly alutaceous though somewhat more weakly so behind, with some irregular longitudinal carinae at the base, those closest to the median carina extending about half the length of the disc. Mesopleurum wholly alutaceous, callus moderately convex, subtended by a groove which runs anteriorly from the hind margin and gives rise to a branch which extends obliquely upward toward the anterior wing-base. Claws with a weak tooth. Fore wing with discoidal vein arising a short distance down on transverse median vein; discoidal cell weakly outlined. Abdomen slender, sessile; subgenital plate shallowly emarginate. Genitalia not studied.

Remarks.—This species is known only from the type.

31. APENESIA CUBENSIS new species

Holotype. — ♂, CUBA: So. side Pico Turquino, 3000-5000 feet, June 1936 (P. J. Darlington, Jr.) [MCZ, No. 30441].

Description of type. — Length 4 mm.; LFW 3.5 mm. Head and thorax black except pronotum margined with brown; abdomen dark brown, sides of basal segments suffused with light brown; palpi straw-colored; mandibles straw-colored except black at extreme base and the teeth rufous; clypeus rufous apically; antennae straw-colored except weakly infuscated on apical half; tegulae testaceous; legs wholly straw-colored, tarsi tending to be slightly darker than basal parts of legs; wings hyaline, veins and stigma brown. Mandibles with four sharp teeth (Fig. 71). Clypeus rounded apically, the margin minutely crenulate; median line with a small tooth; median carina sharp, weakly arched in profile (Fig. 87). First four antennal segments in a ratio of about 26:6:22:20, segment three 3.3 X as long as thick, segment eleven nearly 4 X as long as thick; pubescence erect and bristling, setulae of segment eleven .7 as long as width of segment; flagellum without erect setae which stand above the pubescence. Front alutaceous, rather weakly shining, with small, shallow punctures which are separated by 2-4 X their own diameters. WH .95 X LH; inner orbits converging below, WF .59 X WH, 1.20 X HE. Head much produced behind eyes, distance from eye tops to vertex crest subequal to HE; anterior ocellus located far above a line drawn between eye tops. Ocelli of moderate size, DAO .20 X WF; OOL 1.35 X WOT. Pronotum of moderate length, with a sharp transverse carina anteriorly but otherwise with smooth contours; entire thoracic dorsum alutaceous, moderately shining, and with weak punctures. Notauli complete, slender and subparallel; groove at base of scutellum slender, scutellar disc rather flat, impunctate. Propodeal disc 1.15 X as wide as long; median carina complete although weakened just before the transverse carina, which is also rather weak; lateral carinae well defined but sublateral carinae indistinct; disc alutaceous, the basal triangle filled with short longitudinal carinae; declivity and side pieces also alutaceous. Mesopleurum wholly alutaceous, obscurely punctate, callus subtended by an arching groove but not very convex. Middle tibiae with the hairs on the upper side only slightly thicker than those on the other tibiae; claws strongly dentate. Fore wing with discoidal vein interstitial with median vein, rather weak. Subgenital plate emarginate apically. Genitalia (Fig. 64) with the lateral elements rather similar to those of *chiricahua*, but the aedoeagus of unusual form, broad at the

base, apically with two pairs of simple processes below which is a pair of lateral expansions.

Remarks.—The alutaceous integument of this species suggests *chiricahua* and its allies, as do the genitalia. This unique specimen is the only male *Apenesia* known from the Antilles.

32. APENESIA MEXICANA (Cameron) new combination

Epyris mexicanus Cameron, 1904, Trans. Amer. Ent. Soc., 30: 263. [Type: ♂, MEXICO (no further data) (BMNH)].—Kieffer, 1914, Das Tierreich, 41: 344.

Description of type.—Length 4.8 mm.; LFW 3.0 mm. Body black except first abdominal tergite margined with light brown; palpi light brown; mandibles yellowish brown except dark at base and apex; scape weakly infuscated, flagellum castaneous basally, gradually infuscated to such an extent that the apical few segments are nearly black; tegulae fuscous; coxae and femora dark brown, legs otherwise yellowish brown; wings hyaline, veins and stigma brown. Mandibles slender, superficially three-toothed, actually with four teeth, third tooth very small (Fig. 73). Clypeus obtusely angulate apically, except sides gently rounded and extreme tip subacute (about as in Fig. 84); median ridge, in profile, weakly arched. First four antennal segments in a ratio of about 13:4:6:6, segment three 1.7 X as long as thick, segment eleven 2.4 X as long as thick; pubescence short, suberect, longest setulae of segment eleven only about .3 as long as width of segment; flagellum also with a few scattered, fully erect setae which stand out slightly above the pubescence. Antennal scrobes not margined; eyes with some short, weak hairs. Front rather uniformly but weakly alutaceous, moderately shining, with fairly strong punctures which are separated, on the average, by 1-2 X their own diameters (more crowded along the midline); vertex and temples alutaceous, rather weakly punctate; front with a shallow median impression. Head wider than high, WH 1.04 X LH; inner orbits converging below, WF .54 X WH, 1.10 X HE; vertex broadly rounded off a distance above eye tops equal to about two-thirds HE. Ocelli small, DAO .17 X WF; ocellar triangle slightly less than a right angle; anterior ocellus barely touching a line drawn between eye tops; OOL 1.2 X WOT. Pronotum moderately long, its sides approaching anteriorly as straight lines, as seen from above; transverse carina strong, weakly arched, disc otherwise smooth except for a very faint indication of a transverse impression near the posterior margin; disc of pro- and mesonota strongly shining, obscurely alutaceous,

with moderately strong punctures; notauli slender, complete, weakly diverging anteriorly. Propodeal disc 1.35 X as wide as its median length; lateral, sublateral, and transverse carinae strong; median carina strong but much weakened posteriorly; disc with basal triangular area filled with strong reticulations, elsewhere polished, obscurely alutaceous; declivity and side pieces polished and with weak sculpturing. Mesopleurum alutaceous, with weak punctures anteriorly, callus large but not strongly convex, subtended by a strong groove. Middle tibiae spinose. Fore wing with discoidal cell very weakly outlined by pigmented lines; discoidal vein interstitial with media. Subgenital plate arenately emarginate apically. Genitalia (Fig. 65) with the parameres large, strongly excavated basally for reception of volsellae; ventral arms of digiti elongate and strongly curved laterad; aedoeagus relatively slender, strongly compressed, apex not deflected ventrad, bearing a few minute lateral setae.

Other males examined.—MEXICO: MORELOS: 1, 4 mi. E. of Cuernavaca, 6000 feet, 23 June 1959 (on honeydew, H. E. Evans) [MCZ]; 1, 5 km. N. of Alpuyecá, 3400 feet, 10 Aug. 1962 (H. E. Evans) [MCZ].

Variation.—The two Morelos specimens resemble the type very closely indeed; LFW varies from 3.0 to 3.7 mm., WF from 1.04 to 1.07 X HE, OOL from 1.15 to 1.18 X WOT.

Remarks.—The short antennal pubescence and the setae on the apical aedoeagal lobes suggest *peculiaris*, although the mandibles approach those of the several species which follow.

33. APENESIA TESTACEIPES (Cameron) new combination

Epyris testaceipes Cameron, 1888, Biol. Centr.-Amer., Hymen. I, p. 452, pl. XIX, fig. 18. [Type: ♂, PANAMA: Bugaba (G. C. Champion) (BMNH)].

Rhabdepyris (Trichotepyrus) testaceipes Kieffer, 1908, Gen. Insect., 76: 32.
Cleistepyrus testaceipes Kieffer, 1914, Das Tierreich, 41: 492.

Description of type.—Length 4.8 mm.; LFW 3.6 mm. Head and thorax black; abdomen dark brown, sides of first tergite and apex of last tergite lighter brown; mandibles and clypeus light brown; antennae testaceous except apical half weakly infuscated; legs bright testaceous except coxae very weakly infuscated; wings subhyaline, veins and stigma dark brown. Mandibles slender, with three teeth in an oblique series (about as in *maya*, Fig. 74). Clypeus broadly rounded except median portion truncate and with a minute median tooth which is a continuation of the median

carina, this carina weakly arched in profile (Fig. 88). First four antennal segments in a ratio of about 30:10:17:14, segment three 2.7 X as long as thick, segment eleven 3 X as long as thick; pubescence pale, coarse, suberect, longest setulae of segment eleven about half as long as width of segment; erect setae sparse, barely exceeding pubescence. Front uniformly, rather weakly alutaceous, moderately shining, punctures small but well defined, separated by 3-5 X their own diameters. WH 1.03 X LH; inner orbits subparallel below, WF .50 X WH, .90 X HE. Ocelli somewhat enlarged, DAO .25 X WF; front angle of ocellar triangle less than a right angle; OOL .95 X WOT. Vertex evenly rounded off a distance above eye tops equal to slightly more than half IIE. Pronotum rather long, with a sharply defined, arching carina in front; disc otherwise rather smooth, alutaceous, moderately shining, punctures strong except along median line. Mesoscutum shining, much less distinctly alutaceous than pronotum; punctures small, closely spaced along notauli but more sparse medially; scutellar disc with a few punctures, its basal groove slender. Propodeal disc 1.2 X as wide as long, with strong lateral and sublateral carinae, median carina strong and attaining the strong transverse carina; basal triangle filled with coarse reticulations; rest of disc polished, very weakly alutaceous; posterior slope alutaceous, with a pair of median carinae. Mesopleurum weakly alutaceous, weakly punctate. Middle tibiae weakly spinose; claws dentate. Fore wing with discoidal cell weakly outlined, discoidal vein arising near top of transverse median vein; basal vein reaching subcosta basad of stigma by about half the length of the stigma. Subgenital plate with a broadly U-shaped emargination. Genitalia with the lateral elements closely resembling those of *maya* (Fig. 67) except ventral arm of digitus more evenly curved; aedoeagus slender, terminating in two pairs of slender, acute processes (Fig. 66).

Remarks. — This species is known only from the type.

34. APENESIA MAYA new species

Holotype. — ♂, GUATEMALA: [San Pedro] Yepocapa, [Dept. Chimaltenango, 4850 feet] May 1948 (H. T. Dalmat) [USNM, No. 66011].

Description of type. — Length 4.5 mm.; LFW 3.4 mm. Head and thorax black; abdomen dark brown, first tergite margin with light brown; palpi and mandibles straw-colored, the latter tipped with dark red; clypeus suffused with rufous apically; antennae bright yellowish brown basally, somewhat infuscated beyond

segment five; tegulae testaceous; legs bright yellowish brown except coxae and femora darker brown; wings subhyaline. Mandibles with three teeth in an oblique series (Fig. 74). Clypeus obtusely angulate apically, tectiform, median ridge not arched in profile (Fig. 89). First four antennal segments in a ratio of about 29:8:14:14, segment three 1.9 X as long as thick, segment eleven 2.4 X as long as thick; pubescence semi-erect, longest setulae of segment eleven about half as long as width of segment; erect setae fairly numerous on under side of basal segments, but only slightly exceeding the pubescence. Front moderately shining, wholly but weakly alutaceous, strongly punctate, the punctures rather evenly distributed over the front and vertex, separated by 1-1.5 X their own diameters. WH 1.04 X LH; inner orbits converging below, WF .55 X WH, 1.08 X HE. DAO .18 X WF; front angle of ocellar triangle less than a right angle; OOL 1.12 X WOT. Vertex very broadly rounded, distance from eye tops to vertex crest equal to slightly over half HE. Pronotum of moderate length, seen from above with the sides approaching evenly toward the front, not concave; transverse carina margining the disc in front strong, arcuate; disc strongly shining, barely alutaceous, punctate like the front. Mesoscutum also shining, but with the punctures smaller and more widely separated; notauli complete; scutellar disc shining, with several punctures. Propodeal disc 1.25 X as wide as long, with some rather prominent lateral setae; median carina complete, reaching the posterior carina, which is rather weak and situated just below the crest of the declivity; disc with basal triangle strongly reticulate, otherwise smooth and polished except irregularly sculptured laterally, between the rather ill-defined lateral and sublateral carinae; declivity alutaceous, punctate above and on the sides. Mesopleurum wholly but weakly alutaceous, moderately shining, weakly punctate anteriorly. Middle tibiae spinose above; claws dentate. Fore wing with discoidal vein interstitial with median vein, discoidal cell very weakly outlined. Abdomen sessile, fusiform; subgenital plate broadly truncate. Genitalia (Fig. 67) with the parameres broad apically; ventral arms of digiti strongly bent laterad; aedoeagus with a complex series of apical lobes some of which are prominently fringed, the lateral lobes with some minute setae.

Paratype.—GUATEMALA: 1 ♂, same data as type except December 1948 [USNM]. *Additional specimen* (assigned here tentatively).—PANAMA: 1 ♂, Barro Colorado Island, Canal Zone, 26 March 1924 (J. C. Bradley) [CU].

Variation.—The paratype is smaller than the type (LFW about 3 mm.). The front is slightly less alutaceous and more shining, and the punctures tend to be slightly more widely spaced. Standard measurements are virtually the same as for the type. The Panama specimen is without a head and difficult to place with certainty. The genitalia resemble those of *maya* closely, but the aedoeagus is more conspicuously setose on the sides and the median apical portion differs in details. The pronotum is slightly more elongate than in the type of *maya*, and its surface is much more heavily alutaceous. The propodeum does not differ noticeably from that of the type and paratype of *maya*.

35. APENESIA NEOTROPICA new name

Rhabdopyris paraensis Kieffer, 1910, Ann. Soc. Ent. France, 78: 298-299.

[*Holotype*: ♂, BRAZIL: Pará (C. F. Baker) (Pomona College, Claremont, Calif.)]. Preoccupied by *Propristocera paraensis* Kieffer, 1910, *ibid.*, p. 290.

Cleistopyris paraensis Kieffer, 1914, Das Tierreich, 41: 492-493.

Description of type.—Length 5.0 mm.; LFW 3.7 mm. Head and thorax black, abdomen brown, first and second tergites margined laterally and posteriorly with yellowish brown; mandibles yellowish brown, teeth rufous; clypeus margined with rufous; antennae light yellowish brown, apical three segments somewhat infuscated; front coxae nearly black, other coxae and all the femora dark brown, remainder of legs yellowish brown; wings subhyaline, with dark setulae, veins and stigma brown. Mandibles rather slender apically, with three strong teeth in an oblique series (as in *maya*, Fig. 74). Clypeus obtusely produced, with a strong median tooth (Fig. 90); median area weakly elevated, not carinate. Antennae with first four segments in a ratio of about 32:9:18:17, segment three 2.5 X as long as thick, segment eleven 2.8 X as long as thick; pubescence semierect, setulae of segment eleven slightly over half as long as width of segment; also with a few scattered setulae which are fully erect and slightly longer than the others, most noticeable on segments 3-7. Front shining but weakly and uniformly alutaceous, punctures small but well-defined, separated by from 1 to 3 X their own diameters. Head about as wide as high, vertex rather narrowly rounded off a distance above eye tops equal to not much over half HE. Front narrow, inner orbits convergent below, WF .53 X WH, about equal to HE; DAO .19 X WF, ocelli in a compact triangle, front angle less than

a right angle, front ocellus barely touching a line drawn between tops of eyes; OOL 1.13 X WOT. Pronotum elongate, sides, seen from above, somewhat concave, disc margined anteriorly with a strong transverse carina; median line of pronotum not elevated; surface of pro- and mesonota shining, weakly and uniformly alutaceous, punctures small but strong, fairly closely spaced except more sparse medially. Propodeal disc almost square (very slightly wider than long) and with strong posterior corners and posterior margining carina; lateral and sublateral carinae strong, median carina strong and reaching transverse carina; disc with strong and irregular reticulations medio-basally, otherwise shining and weakly alutaceous; posterior slope evenly and strongly alutaceous, side pieces somewhat shining, more weakly alutaceous. Mesopleural callus convex, impunctate, shining but weakly and uniformly alutaceous; remainder of mesopleurum alutaceous, rather weakly punctate. Middle tibiae spinose above. Fore wing with discoidal and subdiscoidal veins faintly pigmented, but vein margining outer side of discoidal cell barely indicated; discoidal vein interstitial with median vein; transverse median vein oblique and somewhat curved below. Abdomen sessile; subgenital plate truncate. Genitalia (Fig. 76) with parameres much enlarged apically, shaped somewhat as in *maya* but inner margin less sinuate; ventral arms of digiti erect, inner margin arched; aedoeagus exceeding complex, consisting of numerous slender apical processes all of which are in some measure fringed or serrate.⁵

Additional males examined.—BRAZIL: 1, Santarem [US NM]. PERU: 1, Colonia Perene, 18 mi. NE La Merced, Junin, 3 Jan. 1955 (Schlinger & Ross) [CAS].

Variation.—These two specimens are slightly smaller than the type (LFW 3.2-3.3 mm.) but differ little in color or structure. In the Santarem specimen WF measures .95 X HE, OOL 1.15 X WOT; in the specimen from Peru WF measures .92 X HE, OOL 1.23 X WOT. In both specimens the antennae are slightly shorter than in the type, segment eleven measuring only about 2.5 X as long as thick.

36. APENESIA INCA new species

Holotype.—♂, PERU: Upper Rio Pachitea, 21 July 1920 (Cornell Univ. Exped.) [CU, No. 3880].

⁵ The description and figure of the genitalia are based on the Santarem specimen, the genitalia of the type not having been extracted.

Description of type. — Length 5 mm.; LFW 3.2 mm. Head and thorax black; abdomen dark brown except basal two segments and apical segment partially suffused with paler brown; palpi straw-colored; mandibles and clypeus ferruginous; first three antennal segments bright yellowish brown, fourth segment suffused with dull brown, remainder of flagellum dull brownish; tegulae light brown; coxae and femora medium brown, remainder of legs yellowish brown; fore wing lightly tinged with brown, veins and stigma dark brown. Mandibles with three teeth in an oblique series, basal tooth rather small (Fig. 75). Clypeus obtusely angulate except the extreme tip weakly concave so as to form two blunt teeth (Fig. 91); median ridge weakly arched in profile. First four antennal segments in a ratio of about 30:8:17:15, segments three and eleven each about 2.3 X as long as thick; pubescence pale, semierect, longest setulae of segment eleven about half as long as width of segment; erect setae sparse, barely exceeding pubescence. Front shining, wholly but rather weakly alutaceous, punctures small, for the most part separated by 2-3 X their own diameters. Eyes covered with short hairs. Head wider than high, WH 1.06 X LH; front of moderate width, inner orbits subparallel below; WF .59 X WH, 1.17 X HE. Vertex broadly rounded, distance from eye tops to vertex crest equal to less than half HE. Ocelli of moderate size, DAO .20 X WF; front angle of ocellar triangle less than a right angle; OOL 1.15 X WOT. Pronotum moderately long, its sides concave as seen from above; carina margining disc anteriorly strong; median line weakly elevated and without punctures, remainder of disc with strong, well spaced punctures; entire thoracic dorsum alutaceous although moderately shining. Mesoscutum with strong punctures which tend to be crowded along the notauli, which are complete. Propodeal disc very slightly wider than long; disc alutaceous, median carina complete and flanked by some shorter carinae on the basal triangle; lateral and sublateral carinae well developed; posterior carina strong and with a series of foveae in front of it; declivity alutaceous. Mesopleurum weakly alutaceous, obscurely punctate, callus large, moderately shining. Middle tibiae spinose above. Fore wing with the discoidal vein arising well down on the transverse median vein, fairly distinct but the discoidal cell otherwise only very weakly outlined. Abdomen sessile, fusiform; subgenital plate broadly truncate. Genitalia (Fig. 77) with the parameres very large, broadly truncate apically; ventral arms of digiti unusually large, broad and subtruncate apically; aedocagus of

much simpler structure than in the preceding several species, and without setae; median apical lobes of aedoeagus rounded.⁶

Paratypes. — PERU: 1 ♂, Dos de Mayo to El Porvenir, Cam. del Pichis, 6 July 1920 (Cornell Univ. Exped.) [CU]. ECUADOR: 1 ♂, Naranjal, Prov. Guayas, Dec. 1955 (Levi-Castillo) [USNM].

Variation. — The paratype from Peru is larger than the type (LFW 4.2 mm.) and has the sculpture of the basal triangle of the propodeum slightly different, the carinae being straighter and fewer in number. The Ecuador paratype approximates the type in size, but the discoidal vein is very weak and is interstitial with the median vein. This specimen also has the third antennal segment no longer than the fourth and only about twice as long as wide; the front is very narrow, WF .55 X VII, 1.05 X HE; the ventral arms of the digiti are rounded apically, as shown in Figure 77. Both paratypes have the clypeus only very indistinctly bidentate.

BRASILIENSIS SPECIES-GROUP

The species of this group differ from those of the preceding group only in having the abdomen short-petiolate and the inner margins of the parameres strongly setose for a considerable distance. The thirteen known species collectively range from New York and central Mexico south to Brazil and Bolivia. The type species of Kieffer's genera *Cleistopyris* and *Dipristocera* belong to this group.

Certain of the species of this group are reasonably distinctive (*fulvicollis*, *parapolita*), but the remainder form a very closely knit complex. I have found the shape of the clypeus and the characters of the aedoeagus most useful in distinguishing species, but some intraspecific variation occurs in both these features. Furthermore, the clypeus is subject to wear, and the aedoeagus is so complex that it may appear very different when viewed from slightly different angles. At present, all the species of this group are known from one or only a few specimens, and it is probable that much further revision of this group will be necessary when more material is available for study. Some of the specific differences are summarized in Table VI, and some characters are illustrated in Plates 7-9.

⁶ The genitalia figured are those of the Ecuador paratype. Those of the type are very similar except that the ventral arms of the digiti are obliquely subtruncate rather than evenly rounded as figured.

TABLE VI. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF BRASILIENSIS GROUP

Species	LFW (mm.)	WH/LH	WF/HE	OOL/WOT	Ant. 11 L/W	Propodeal disc W/L	Med. lobe clypeus
37. parapolita	2.5	0.95	1.05	1.25	3.2	0.83	produced
38. angustata	2.7	1.05	1.15	1.33	2.9	1.05	produced
39. microchela	3.0	1.03	1.14	1.36	3.8	1.14	produced
40. tarascana	3.4	1.00	1.30	1.30	3.9	1.00	produced
41. tlauhucana	3.2	1.00	1.25	1.50	3.3	1.00	produced
42. olmeca	3.5	1.00	1.10	1.15	3.2	1.20	produced
43. fulvicollis	3.5	1.02	1.04	1.13	--	1.12	produced
44. alutacea	2.8	1.06	1.10	1.50	4.1	1.10	truncate
45. zamora	3.8	1.05	1.05	1.45	3.0	1.10	truncate
46. transversa	4.3	1.07	1.08	1.28	5.0	1.30	truncate
47. venezuelana	4.0	1.06	1.10	1.30	3.4	1.30	truncate
48. brasiliensis	4.8	1.10	1.05	1.25	3.2	1.20	truncate
49. peruana	4.0	1.09	1.12	1.55	3.1	1.25	truncate

37. APENESIA PARAPOLITA new name

Propristocera polita Evans, 1958, Proc. Ent. Soc. Wash., 59: 294-295.

[Type: ♂, SOUTH CAROLINA: Columbia, 16 Aug. 1951 (L. & G. Townes) (Coll. H. K. Townes)]. Preoccupied by *Misepyrus politus* Fouts 1930 (♂, Philippines) [= *Apenesia polita* (Fouts), new combination].

Description of type. — Length about 3.5 mm.; LFW 2.5 mm. Head black, thorax dark brownish fuscous, abdomen medium brown; mandibles yellowish brown, darker basally and apically; scape and pedicel straw-colored, flagellum gradually darkened to brown at apex; coxae brown, femora light brown, remainder of legs straw-colored; wings hyaline, with dark setulae, stigma brown, veins light brown. Mandibles with five strong sharp teeth in a row. Clypeus with a prominent median lobe the margin of which is rounded with a small median tooth (Fig. 96); median carina very strong, arched in profile. First four antennal segments in a ratio of about 4:1:3:3, segment three 2.7 X as long as thick, segment eleven 3.2 X as long as thick; pubescence erect and bristling, setulae of segment eleven nearly as long as width of segment. Front strongly polished, very obscurely alutaceous, punctures small and widely separated; center of front with a longitudinal impression. WH .95 X LH; WF .53 X WH, 1.05 X HE; ocelli small, well separated, front angle of ocellar triangle less than a right angle; OOL 1.25 X WOT. Front evenly rounded off a distance above eye tops nearly equal to HE; occipital carina very strong. Pronotum crossed anteriorly by a somewhat irregular carina behind which is a foveolate groove; posterior margin of pronotum somewhat depressed. Mesoseutum somewhat alutaceous, punctures very small and widely spaced.

Propodeum elongate, measuring 1.4 X as long as wide in full dorsal view, the disc measuring 1.2 X as long as wide; surface wholly covered with reticulations; median carina distinct, occupying a shallow depression; posterior transverse carina present, but barely distinguishable from the surface sculpturing; declivity and side pieces with strong surface sculpturing. Mesopleurum with the callus convex, weakly alutaceous; remainder of mesopleurum alutaceous, anteriorly rather coarsely sculptured. Middle tibiae not spinose. Fore wing with transverse median vein erect, weakly arched, discoidal and subdiscoidal veins absent. Abdomen with a very short petiole (Fig. 81). Subgenital plate broadly truncate apically. Genitalia with the parameres slender, unlobed, the apices deflected mesad; volsellae with a group of spines at base and another at apex of digitus; aedoeagus complex, terminating in several lobes, the most lateral lobes exceeding the others (see fig. 6 in Evans, 1958).

Other males examined. — SOUTH CAROLINA: 1, Greenville, 31 Aug. 1952 (L. & G. Townes) [Coll. H. K. Townes]. VIRGINIA: 1, Dunn Loring, 11 Sept. 1948 (K. V. Krombein) [Coll. K. V. Krombein]. WEST VIRGINIA: 1, Barbour Co., Philippi, 25 Sept. 1938 (G. E. Wallace) [CM]. NEW JERSEY: 1, Butler, Summer 1955 (R. Dorland) [USNM]. NEW YORK: 1, Ithaca, 14 Sept. 1956 (H. E. Evans) [CU].

Variation. — As noted in the original description, there is an unusual amount of variation in the sculpturing of the pronotum and propodeum in this species. The only additional specimen I have seen since 1958 is the one from West Virginia listed above; this specimen is very similar to the type in sculpturing and in color and size (LFW 2.3 mm.), but has the discoidal and subdiscoidal veins indicated by weakly pigmented streaks. The Ithaca, N. Y., specimen is more darkly colored than the others and has the pronotum somewhat rugulose and the propodeum very strongly reticulate.

Remarks. — This species seems to have no close relatives. Perhaps *angustata* is somewhat related, but that species has spines on the middle tibiae and genitalia of a very different type. This is the only *Apenesia* occurring widely in eastern United States, and the only female known to occur in eastern United States presumably represents the opposite sex of *parapolita*. It is so treated in the final section of this revision, where all females are considered together.

38. *APENESIA ANGUSTATA* (Evans) new combination

Propristocera angustata Evans, 1958, Proc. Ent. Soc. Wash., 59: 295-296.

[Type: ♂, COSTA RICA: San Pedro de Montes de Oca, 3 Feb. 1935 (on *Ipomoea tiliacea*, C. H. Ballou) (USNM, No. 64113)].

Description of type. — Length 3.2 mm.; LFW 2.7 mm. Body dark castaneous, head strongly suffused with blackish; palpi straw-colored; mandibles testaceous; antennae testaceous basally, gradually infuscated beyond segment three, apical segments medium brown; legs entirely straw-yellow; wings subhyaline, veins light brown, stigma dark brown. Mandibles with five teeth which are subequal in size except for the large apical tooth. Clypeus with the median lobe broad, its apex weakly rounded, subdentate medially (Fig. 97). First four antennal segments in a ratio of about 21:6:13:13, segment three 2.5 X as long as thick, segment eleven nearly 3 X as long as thick; pubescence pale, erect, longest setulae of segment eleven about two-thirds as long as width of segment. Front shining, wholly although weakly alutaceous, punctures weak, separated by about 3 X their own diameters. WH 1.05 X LH; inner orbits converging below, WF .58 X WH, 1.15 X HE. Ocelli small, situated far above eye tops, front angle of triangle less than a right angle; OOL 1.33 X WOT. Vertex forming an even arc above eye tops; distance from eye tops to vertex crest equal to about two-thirds X HE. Pronotum with transverse carina moderately strong, situated part way down the anterior face; collar with a median impression; surface of pronotum moderately alutaceous, punctures numerous but rather weak. Mesoscutum and entire scutellar disc alutaceous. Propodeal disc slightly wider than long, weakly margined behind; surface alutaceous, basal triangle with reticulate ridges. Mesopleurum wholly alutaceous, weakly punctate. Middle tibiae weakly spinose. Fore wing with the discoidal cell outlined by weakly pigmented lines; discoidal vein interstitial with median vein. Abdomen with a very short petiole, about as in Figure 81. Subgenital plate broadly truncate apically. Genitalia with the lateral elements about as in *microchela*, shown in Figure 93; aedoeagus (Fig. 109) in general like that of *microchela*, but with larger median apical lobes which bear minute denticles in rows.

Other males examined. — COSTA RICA: 4, same data as type [USNM, CU].

Variation. — In three specimens the thorax and abdomen are dark brownish fuscous, the head black. In some specimens the

clypeus appears shorter than figured (perhaps the result of wear) and the median tooth is indistinct. In three specimens the discoidal and median veins are slightly disjointed.

Remarks.—There can be no doubt of the close resemblance of this species to *microchela* (Kieffer). It is possible that when more material is available the two will be found to fall within the range of variation of one species, or at most to be sub-specifically distinct.

39. APENESIA MICROCHELA (Kieffer) new combination

Pristocera microchela Kieffer, 1911, Ann. Soc. Sci. Bruxelles, 35: 214. [Type: ♂, MEXICO: TABASCO: Teapa, March (H. H. Smith) (BMNH)].

Dipristocera microchela Kieffer, 1914, Das Tierreich, 41: 471. [Made type of new genus *Dipristocera*, monobasically].

Description of type.—Length 4 mm.; LFW 3 mm. Body piceous except basal abdominal segments suffused with light brown; palpi straw-colored; mandibles light brown, the teeth rufous; antennae testaceous, apical six segments suffused with brown; legs testaceous, front coxae suffused with brown; wings subhyaline, veins and stigma brown. Mandibles with five sharp teeth in an oblique series. Clypeus broadly rounded, with an indistinct median angulation (Fig. 98); median line weakly elevated, not carinate. First four antennal segments in a ratio of about 24:7:17:17, segment three 3 X as long as thick, segment eleven 3.8 X as long as thick; pubescence pale, suberect, longest setulae of segment eleven .6 as long as width of segment. Front strongly alutaceous, weakly shining, punctures small, rather shallow, separated by 3-4 X their own diameters. WH 1.03 X LH; inner orbits converging below, WF .58 X WH, 1.14 X HE. Ocelli not enlarged, forming a triangle well above eye tops, front angle less than a right angle; OOL 1.36 X WOT. Vertex evenly rounded, distance from eye tops to vertex crest equal to about two-thirds X HE. Pronotum moderately long, its transverse carina strong, straight; disc strongly alutaceous, weakly punctate, very weakly depressed close to posterior margin. Mesoscutum alutaceous, with small punctures; notauli complete; scutellar disc weakly alutaceous, basal groove strong, complete. Propodeal disc 1.14 X as wide as long, with strong reticulations in the basal triangle, on the sides behind strongly alutaceous; median carina complete, but transverse carina not sharply differentiated from reticulations bordering the disc behind. Mesopleurum alutaceous,

obscurely punctate, callus subtended by a foveolate groove. Middle tibiae spinose; claws weakly toothed. Fore wing with discoidal cell clearly outlined, discoidal vein interstitial with median vein. Abdominal petiole short (Fig. 118). Subgenital plate truncate. Genitalia (Fig. 93) with the parameres slender, with a short lateral and a longer mesal lobe; ventral arms of digiti very long, obliquely truncate apically; aedoeagus bearing a strong resemblance to that of the following three species, with small, sharply pointed median lobes lying between large lateral lobes which considerably exceed them.⁷

Other males examined.—MEXICO: VERACRUZ: 1, Atoyac, May (H. H. Smith) [BMNH].

Variation.—The Atoyac specimen is smaller than the type (LFW 2.8 mm.) and very similar in structure and standard measurements (WF 1.10 X HE, OOL 1.40 X WOT). However, the head is no wider than high and the clypeus evenly arcuate, with no indication of a median angulation.

Remarks.—Kieffer characterized his genus *Dipristocera* as having paired pits on the scutellum. However, this is based on an erroneous observation, as the scutellum of this species has the usual groove at the base.

40. APENESIA TARASCANA new species

Holotype.—♂, MEXICO: MICHOACAN: Tuxpan, 6000 feet elev., 6 July 1959 (H. E. Evans) [MCZ, No. 30442].

Description of type.—Length 4.4 mm.; LFW 3.4 mm. Body black except sides of first abdominal tergite light brown; palpi brown; mandibles ferruginocastaneous, blackish, at base; antennae uniformly dark brown; tegulae light brown; coxae and femora dark brown, trochanters, tibiae, and tarsi light brown; wings lightly tinged with brownish, veins and stigma brown. Mandibles with five strong teeth (Fig. 112). Clypeus rounded apically, weakly angulate medially; median carina arched in profile (Fig. 99). First four antennal segments in a ratio of about 29:8:23:21, segment three 3 X as long as thick, segment eleven nearly 4 X as long as thick; pubescence erect, bristling, setulae of segment eleven .7 X as long as width of segment; flagellum without erect setae distinguishable from the pubescence. Front strongly shining, very obscurely alutaceous, punctures

⁷ The description and figure of the genitalia are based on the Atoyac specimen, the genitalia of the type not having been extracted.

small, separated by 3-4 X their own diameters. Eyes with numerous very short, inconspicuous setae. Head as wide as high; inner orbits convergent below, WF .62 X WH, 1.3 X HE. Ocelli small, DAO .15 X WF; OOL 1.3 X WOT; front angle of ocellar triangle less than a right angle. Vertex evenly rounded, distance from eye tops to vertex crest equal to about two-thirds HE. Pronotum smooth and polished, with small, widely spaced punctures; transverse carina strong. Mesonotum also strongly polished, non-alutaceous, with small, well spaced punctures; notauli not quite reaching margin of mesoscutum. Propodeal disc about as wide as long; lateral carinae strong, median carina obsolescent behind, posterior transverse carina weak and irregular; disc reticulate at the base, behind alutaceous, somewhat shining. Mesopleurum shining, weakly alutaceous. Middle tibiae with spines above; claws dentate. Fore wing with the discoidal vein fairly strong, arising a short distance down on the transverse median vein; discoidal cell fully outlined by weakly pigmented lines. Abdomen with a very short petiole (about as in Fig. 81). Subgenital plate shallowly emarginate. Genitalia (Fig. 92) with the parameres with a strong mesal lobe; ventral arms of digiti elongate, club shaped; aedoeagus with large, strongly compressed lateral lobes which much exceed the small, sharply pointed median lobes.

Paratypes. — MEXICO: MICHOACAN: 2 ♂♂, same data as type [CU, USNM]; CHIAPAS: 1 ♂, San Cristobal las Casas, 30 July 1957 (Chemsak and Rannells) [CIS].

Variation. — The two topotypic paratypes are smaller than the type (LFW 2.9 and 3.0 mm.), but agree closely in color and in structure. The Chiapas paratype differs in several details. LFW measures 3.3 mm.; the mandibles and antennae are very dark brown, the color otherwise similar to that of the type; the front is very weakly alutaceous. The head is slightly higher than wide, WH measuring .98 X LH. WF is 1.45 X HE, OOL 1.5 X WOT. The propodeum is unusually elongate, the disc .9 as wide as long. The aedoeagus closely resembles that of the type but the ventral arms of the digiti are more slender.

41. APENESIA TLAHUICANA new species

Holotype. — ♂, MEXICO: MORELOS: 4 mi. E. of Cuernavaca, 25 June 1959, 6000 feet (on honeydew, H. E. Evans) [MCZ, No. 30443].

Description of type. — Length 4 mm.; LFW 3.2 mm. Body

black except sides of first abdominal tergite light brown; palpi light brown; mandibles yellowish brown except blackish at base and with the teeth rufous; scape and following two antennal segments bright castaneous, antennae beyond third segment gradually infuscated, the apical segments dark brown; tegulae light brown; legs bright castaneous, the coxae and femora darker than the rest; wings subhyaline, veins and stigma brown. Mandibles with five strong teeth. Clypeus short, its apical margin rounded except very weakly produced medially; median line weakly elevated (Fig. 100). First four antennal segments in a ratio of about 28:8:19:18, segment three 2.5 X as long as thick, segment eleven 3.3 X as long as thick; pubescence bristling, setulae of segment eleven .6 as long as width of segment; erect setae no longer than pubescence. Front shining, non-alutaceous, punctures small, separated by 3-4 X their own diameters. Head as wide as high; inner orbits convergent below WF .62 X WH, 1.25 X HE. Ocelli not enlarged, DAO .15 X WF; anterior ocellus situated well above eye tops; OOL 1.5 X WOT. Vertex evenly rounded, distance from eye tops to vertex crest equal to about .7 HE. Pro- and mesonota as described for *tarascana*. Propodeal disc about as wide as long; median basal area strongly reticulate, median carina not reaching transverse carina, which is barely distinguishable among transverse striations along the edge of the declivity; posterior part of disc shining, very weakly alutaceous. Mesopleurum very strongly shining, barely alutaceous. Fore wing and abdominal petiole as in *tarascana*. Subgenital plate truncate apically. Genitalia (Fig. 94) with a large group of small, stout setae at the lower angles of the parameral lobes; ventral arms of digiti elongate, apical part somewhat parallel-sided; aedoeagus with the median apical lobes forming a point which is not notably exceeded by the slender lateral lobes, the latter being twisted mesad.

Paratypes. — MEXICO: MORELOS: 1 ♂, same data as type [CU]; 1 ♂, 30-40 km. NE Cuernavaca, 7-8000 feet, 31 July 1962 (H. E. Evans) [MCZ]. STATE OF MEXICO: 17 ♂♂, 7 km. S. Amecameca, 8000 feet, 12 Aug. 1962 (H. E. Evans) [MCZ, USNM]; 1 ♂, Valle de Bravo, 6500 feet, 3 Aug. 1962 (H. E. Evans) [MCZ].

Variation. — There is little variation in the type series with respect to the clypeus or the aedoeagus, the critical structures by means of which this species may be separated from the closely related species *tarascana* and *olmecca*. There is considerable variation in size (LFW 2.4-3.7 mm.) and some slight variation in

the width of the front (WF 1.20-1.35 X HE). Most specimens are very similar to the type in coloration of the antennae and legs, but there is considerable variation in the Amecameca series; some individuals in this series have the antennae and the coxae and femora wholly dark brown, as in *tarascana*.

42. APENESIA OLMECA new species

Holotype. — ♂, MEXICO: VERACRUZ: 7 mi. SE of Catemaco, 21 April 1953 (R. C. Bechtel & E. I. Schlinger) [CAS].

Description of type. — Length 5 mm.; LFW 3.5 mm. Head and thorax black; abdomen dark castaneous except petiole black, basal segments weakly annulated with light yellowish brown; palpi straw-colored; mandibles yellowish brown except darkened at base and apex; antennae bright yellowish brown except apical five segments weakly infuscated; tegulae testaceous; legs wholly bright testaceous except front coxae weakly infuscated; wings subhyaline, veins and stigma brown. Mandibles with five strong teeth (as in Fig. 112). Clypeus with median lobe of moderate length, longer than in *tlahuicana*, obtusely angulate medially (Fig. 101); median carina low, in profile nearly straight. First four antennal segments in a ratio of about 29:8:19:18, segment three 3 X as long as thick, segment eleven 3.2 X as long as thick; pubescence erect, bristling, longest setulae of segment eleven half as long as width of segment. Front polished, very obscurely alutaceous, punctures small, separated by 3-4 X their own diameters. Head as wide as high; front rather broad, WF .58 X WH, 1.10 X HE. Ocelli slightly enlarged, DAO .19 X WF; OOL 1.15 X WOT. Vertex evenly rounded off a considerable distance above eye tops. Thoracic dorsum polished, punctures numerous but rather small; features as in preceding two species. Propodeal disc 1.2 X as wide as its median length; basal triangle strongly reticulate, rest of disc alutaceous, moderately shining; median carina complete, posterior transverse carina weak and irregular. Mesopleurum polished, weakly punctate, callus large and convex. Middle tibiae weakly spinose above. Fore wing with discoidal cell weakly outlined, discoidal vein arising a short distance down on transverse median vein. Subgenital plate very weakly emarginate. Genitalia with the lateral elements virtually identical to those of *tarascana*, shown in Figure 92, but the aedoeagus (Fig. 108) very different, the lateral apical lobes very much larger and far surpassing the small, acutely pointed median lobes.

Paratypes. — MEXICO: VERACRUZ: 3 ♂♂, same data as type [MCZ, UCD].

Variation. — The three paratypes are all smaller than the type (LFW 2.6 to 2.8 mm.). In all three specimens the antennae are more heavily and extensively infuscated apically and the ocelli barely enlarged (DAO .17 X WF). WF measures 1.08 to 1.22 X HE, OOL 1.29 to 1.35 X WOT. In two specimens the propodeal disc is only about 1.1 X as wide as long and the basal triangle less heavily reticulate than in the type.

43. *APENESIA FULVICOLLIS* (Westwood) new combination

Pristocera fulvicollis Westwood, 1874, Thesaurus Ent. Oxoniensis, p. 165, pl. 29, fig. 3. [Type: ♂, BRAZIL: Amazonas, 1861 (H. W. Bates) (HCOU)]. — Kieffer, 1914, Das Tierreich, 41: 469.

Description of type. — Length 5.8 mm.; LFW 3.5 mm. Head black; thorax black except prothorax wholly bright rufo-castaneous, including notum, collar, and pleura; abdomen medium brown, obscurely banded with darker brown, petiole and most of first tergite blackish; mandibles yellowish brown, the teeth rufous; clypeus yellowish brown except darker medially; antennae light yellowish brown (missing beyond segment three); legs straw-colored except femora very weakly suffused with brownish; wings clear hyaline, veins and stigma brown. Mandibles with five teeth, the teeth rather blunt except for the strong apical tooth (Fig. 114). Clypeus obtusely angulate, the extreme tip rounded (Fig. 102); median line roundly elevated, the elevation weakly arched in profile. First three antennal segments in a ratio of about 15:5:9, segment three 3.5 X as long as thick; pubescence of third segment pale, semi-erect, longest setulae two-thirds as long as width of segment; no erect setae visible. Front very strongly polished, non-alutaceous; punctures small, very widely spaced on the sides but somewhat more crowded medially. WH 1.02 X LH; inner orbits subparallel below, WF .56 X WH, 1.04 X HE. Ocelli slightly enlarged, DAO .20 X WF; ocellar triangle very compact, front angle much less than a right angle; OOL 1.13 X WOT. Vertex broadly rounded; distance from eye tops to vertex crest equal to about two-thirds X HE. Pronotum with a strong, arching transverse carina in front, disc convex behind earina, but without other ridges or grooves; surface strongly polished, non-alutaceous, with weak punctures. Mesoscutum polished, non-alutaceous, weakly punctate, scutellar disc convex, strongly polished. Propodeal disc

1.12 X as wide as long, lateral and sublateral carinae strong, median carina strong, reaching transverse carina, which is also fairly strong; disc with an elongate basal triangle filled with strong reticulations; sides of disc polished. Mesopleurum with the callus strongly convex and polished, subtended by an arcuate groove, remainder of mesopleurum weakly punctate. Middle tibiae strongly spinose. Fore wing with discoidal cell distinctly outlined by pigmented lines; discoidal vein interstitial with median vein; costa extending beyond stigma nearly as far as radial vein. Abdomen with a fairly long petiole (about as in *brasiliensis*, Fig. 82). Subgenital plate weakly emarginate. Genitalia not examined.

Remarks.— This species is known only from the type. The rufous prothorax readily distinguishes it from other known species of *Apensia*, although this color pattern also occurs in several Brazilian species of *Pseudisobrachium*. It is possible that the blunt mandibular teeth and the lack of a median angulation on the clypeus are the result of wear. The antennae were missing beyond segment three at the time of Westwood's original description.

44. APENESIA ALUTACEA new species

Holotype.— ♂, VENEZUELA: San Esteban, near Puerto Cabello, 1940 (P. J. Anduze) [HKT].

Description of type.— Length 3.7 mm.; LFW 2.8 mm. Head and thorax black, abdomen dark brown except marked with lighter brown on sides of basal segments; palpi and mandibles straw-colored except latter rufous at extreme apex; basal three segments of antennae straw-colored, segments 4-6 gradually infuscated, segments 7-13 rather uniformly medium brown; tegulae, and legs in their entirety, straw-colored; wings hyaline, stigma brown, veins light brown. Mandibles with five sharp teeth in an oblique series (Fig. 113). Clypeus broadly truncate, sides of the truncation rounded (Fig. 104); median line weakly elevated except for a small tooth-like elevation a short distance back from the margin. First four antennal segments in a ratio of about 24:5:20:20, segment three 3.3 X as long as thick, segment eleven more than 4 X as long as thick; pubescence erect, bristling, pale in color, longest setulae of apical several segments about as long as width of segments; there are no erect setae which stand above the pubescence. Front, vertex and temples uniformly and rather weakly alutaceous, shining, with very

small punctures which are separated by several times their own diameters. Head wider than high, WH 1.06 X LH; inner orbits convergent below, WF .56 X WH, 1.10 X HE. Vertex evenly rounded off a distance above eye tops equal to somewhat more than half HE. Ocelli small, forming a triangle the front angle of which is less than a right angle; OOL 1.5 X WOT. Thoracic dorsum uniformly and weakly alutaceous like the front, with only minute, barely visible punctures. Pronotum with a subfoveolate transverse impression just before the posterior margin, stronger on the sides than medially; anterior transverse carina strong, arching, disc convex between the anterior carina and the posterior impression. Mesoscutum with the notauli linear, diverging slightly anteriorly and not quite reaching anterior margin. Propodeal disc 1.1 X as wide as long; lateral and median carina rather weak, although complete, transverse carina margining the disc behind weak and barely differentiated from the transverse striae which cover the declivity; sublateral carinae weakly differentiated from the reticulate sculpturing along sides of disc; basal triangular area of disc reticulate, remainder of disc merely alutaceous. Mesopleurum wholly alutaceous, weakly punctate. Middle tibiae weakly spinose above. Fore wing with discoidal cell very weakly outlined by pigmented lines. Abdomen with a short petiole. Subgenital plate weakly emarginate apically. Genitalia (Fig. 95) with the parameres similar to those of *microchela*; ventral arms of digiti broad, truncate apically; aedocagus broad, its margins subangulate just below the apex.

Remarks.— This species, known only from the type, is immediately separable from related species by the alutaceous head and thorax.

45. APENESIA ZAMORA new species

Holotype.— ♂, ECUADOR: Zamora, 1000 meters, 15 Oct. 1961 (D. B. Ladley) [AMNH].

Description of type.— Length 4.5 mm.; LFW 3.8 mm. Head and thorax black; abdomen dark brown except petiole black and sides of basal segments suffused with light brown; palpi light brown; apical two-thirds of mandibles yellowish brown except teeth rufous; antennae medium brown except second segment and apex of first light brown, flagellum slightly darker toward the apex than basally; tegulae light brown; coxae and femora dark brown, trochanters, tibiae and tarsi light brown; wings

hyaline, veins and stigma brown, setulae dark. Mandibles with five teeth, basal three teeth rather small and close together. Clypeus very broadly truncate, sides of the truncation broadly rounded; median carina low, not reaching base or apex. First four antennal segments in a ratio of about 31:8:17:17, segment three and segment eleven each about 3 X as long as thick; pubescence suberect, pale, longest setulae of segment eleven somewhat more than half as long as width of segment; basal segments of flagellum also with a few longer, fully erect setae. Front polished, non-alutaceous, with small punctures which are separated, on the average, by twice their own diameters, more widely spaced than this laterally and above. Head wider than high, WH 1.05 X LH; inner orbits strongly convergent below, WF .56 X WH, 1.05 X HE. Vertex evenly rounded off, distance from eye tops to vertex crest equal to about two-thirds HE. Ocelli small, in a compact triangle well above eye tops; OOL 1.45 X WOT. Pronotal disc short and broad, with a strong transverse carina anteriorly but otherwise smooth, polished, with very small punctures. Mesonotum also strongly polished, non-alutaceous, and with small, well spaced punctures; notauli strong, not quite reaching anterior and posterior margins of mesoscutum. Propodeal disc 1.1 X as wide as long; lateral and sublateral carinae strong, posterior carina developed but not much stronger than the transverse striae which cover the declivity; median carina nearly reaching transverse carina but incomplete basally, flanked by several other rather irregular carinae which fill an elongate basal triangular area; sides of disc smooth and polished. Mesopleurum polished, obscurely punctate, callus large and convex, subtended by a large groove. Middle tibiae spinose above. Fore wing with subdiscoidal vein strong, discoidal vein moderately strong, vein margining outer side of discoidal cell weak. Abdominal petiole relatively long, about as in *brasiliensis* (Fig. 82). Subgenital plate broadly truncate. Genitalia with the mesal lobes of the parameres very large, with numerous rather small setae along the margins; ventral arms of digiti broad, their inner margins rounded (Fig. 107); aedoeagus about as figured for *venezuelana* (Fig. 105) except not quite as broad.

Remarks.—This species is known only from the type.

46. APENESIA TRANSVERSA new species

Holotype.—♂, BRAZIL: Rio de Janeiro, July (no further data) [USNM, No. 66012].

Description of type.—Length 6 mm.; LFW 4.3 mm. Body black except basal abdominal segments weakly suffused with brownish; palpi straw-colored; mandibles yellowish brown except teeth rufous; antennae light castaneous except scape suffused with brown and apical segments of flagellum somewhat infuscated; tegulae testaceous; coxae and femora brown, trochanters, tibiae, and tarsi light yellowish brown; wings subhyaline, veins and stigma brown, setulae dark. Mandibles with five teeth, third and fourth teeth smaller than the others, basal tooth rather broad (Fig. 115). Clypeus weakly arcuately concave apically (about as in *brasiliensis*, Fig. 103); median carina low but well-defined, angulate in profile. First four antennal segments in a ratio of about 35:7:25:25, segment three 3 X as long as wide, segment eleven 5 X as long as wide; pubescence erect, bristling, setulae of segment eleven nearly as long as width of segment; flagellum with a few erect setae on the basal segments which stand out slightly above the pubescence. Front polished, non-alutaceous, with small punctures which are separated, for the most part, by more than their own diameters, below and toward the vertex rather widely spaced. Head wider than high. WH 1.07 X LH; inner orbits convergent below, WF .55 X WH, 1.08 X HE. Vertex rounded off a distance above the eye tops equal to somewhat more than half HE. DAO .19 X WF; OOL 1.28 X WOT; anterior ocellus very slightly above a line drawn between eye tops. Pronotal disc short and broad, with a strong transverse carina anteriorly, disc otherwise smooth except for faint impression on the sides just before the posterior margin; surface polished, punctures small but numerous. Mesoscutum polished, punctures small, sparse, somewhat more crowded along notauli, which are complete; center of scutellar disc impunctate. Propodeal disc short, about 1.3 X as wide as long; lateral and median carinae strong, sublateral carinae moderately strong; posterior carina well developed though not standing out strongly above the transverse striae which cover the declivity; disc with basal triangle filled with strong sculpturing, also sculptured on the sides, otherwise smooth and polished. Mesopleurum polished, obscurely punctate, callus large and convex, subtended by a strong groove. Fore wing with subdiscoidal vein strong, reaching wing margin as a faint line; top and outer side of discoidal cell weakly indicated, also the first recurrent vein. Abdomen with a short petiole. Subgenital plate broadly truncate apically. Genitalia with the aedoeagus strongly tapering apically, the apical portion consisting of a pair of strongly compressed lobes which

are minutely denticulate on their mesal surfaces (Fig. 110); ventral arms of digiti about as in *peruana*, but more rounded apically; parameres shaped as in *peruana*, somewhat less strongly setose than in that species.

Remarks. — This species is known only from the type.

47. APENESIA VENEZUELANA new species

Holotype. — ♂, VENEZUELA: San Esteban, January 1940 (no further data) [MCZ, No. 30444].

Description of type. — Length 6.3 mm.; LFW 4.0 mm. Head, thorax, and abdominal petiole black; remainder of abdomen dark brown with annulations of paler brown, especially toward the base; palpi straw-colored; mandibles yellowish brown except teeth rufous; scape and base of flagellum straw-colored, apical portion of flagellum gradually darkened to castaneous; tegulae and legs entirely straw-colored; wings subhyaline, veins and stigma brown. Mandibles with five teeth, the third and fourth teeth smaller than the others (as in *transversa*, Fig. 115). Clypeus broadly truncate, sides of truncation rounded; median carina low and even. First four antennal segments in a ratio of about 19:5:10:10, segment three 2.5 X as long as thick, segment eleven 3.4 X as long as thick; pubescence pale, bristling, setulae of segment eleven about two-thirds as long as width of segment; flagellum also with a few erect setae on basal segments which stand somewhat above the pubescence. Front polished, non-alutaceous, punctures fairly strong, somewhat crowded in the middle (about their own diameters apart), below, on the sides, and toward the vertex rather widely spaced. Head wider than high, WH 1.06 X LH; inner orbits convergent below, WF .56 X WH, 1.10 X HE. Vertex rounded off a distance above eye tops equal to about two-thirds HE. DAO .19 X WF; OOL 1.30 X WOT; front ocellus touching a line drawn between eye tops. Pronotal disc smooth and polished, with small punctures; transverse carina strong. Mesoscutum polished and with relatively few punctures, these mostly crowded along the notauli, the latter not quite reaching the anterior or posterior margins; scutellar disc impunctate in the center. Propodeal disc short, about 1.3 X as wide as long; lateral and sublateral carinae strong, posterior transverse carina not strongly differentiated from the transverse striae which cover the declivity; median carina moderately strong, flanked by several other irregular carinae which fill the basal triangular area, disc otherwise smooth and polished.

Mesopleurum with distinct punctures except on the callus, which is large and convex, subtended by a strong groove. Fore wing with discoidal cell faintly outlined, subdiscoidal vein reaching wing margin as a very faint line. Abdomen with a short petiole. Subgenital plate weakly emarginate apically. Genitalia (Fig. 105) with the mesal lobes of the parameres unusually large, the ventral arms of the digiti unusually slender; aedoeagus rather broad, terminating in a pair of compressed lobes, each bearing a finger-like process on its inner side.

Remarks.— This species is known only from the type. The genitalia are very similar to those of *zamora*, from Ecuador, but that species has darker legs and antennae and a more elongate propodeum.

48. *APENESIA BRASILIENSIS* (Kieffer) new combination

Rhabdepyris brasiliensis Kieffer, 1910, Ann. Soc. Ent. France, 78: 298.

[Type: ♂, BRAZIL: Pará (C. F. Baker) (Pomona College, Claremont, Calif.)]

Glenobethylus brasiliensis Kieffer, 1914, Das Tierreich, 41: 495.

Description of type.— Length 6.5 mm.; LFW 4.8 mm. Head and thorax shining black, abdomen piceous except somewhat paler on sides of basal segments and at extreme tip; mandibles yellowish brown, teeth rufous; scape testaceous, flagellum of this color basally, but gradually infuscated to medium brown toward the apex; tegulae testaceous; legs wholly bright yellowish brown; wings subhyaline, veins and stigma dark brown. Mandibles with five teeth, third and fourth small and close together, basal tooth strong, reflexed inward (as in *transversa*, Fig. 115). Clypeus broadly truncate (Fig. 103), somewhat elevated along the midline but without a sharply defined carina here. First four antennal segments in a ratio of about 22:5:12:10, segment three 2.5 X as long as thick, segment eleven slightly over 3 X as long as thick; pubescence semi-erect, bristling, setulae of segment eleven .6 as long as width of segment, basal segments (especially 3-7) also with a few completely erect setae which stand slightly above the others. Front shining, non-alutaceous, punctures strong, separated by slightly more than their own diameters except more crowded medially and anteriorly; vertex with smaller, sparser punctures. Head wider than high, WH 1.1 X LH; inner orbits convergent below, WF .53 X WH, 1.05 X HE; vertex broadly rounded off some distance above eye tops, distance from eye tops to vertex crest equal to about two-thirds HE.

Ocelli of moderate size, DAO .18 X WF; ocellar triangle compact, front angle less than a right angle; OOL 1.25 X WOT. Pronotum with a strong carina margining the disc anteriorly; disc otherwise rather smoothly convex, shining, punctures strong, separated by slightly more than their own diameters. Mesoscutum shining, non-alutaceous, punctures strong but rather scattered, more crowded along notauli; notauli strong, absent on anterior .1 and posterior .05; scutellum strongly shining, center of disc largely impunctate. Propodeum short, barely longer than wide, disc 1.2 X wider than long; disc with strong lateral, sublateral, and posterior transverse carinae, median carina strong but slightly undulate and not quite reaching posterior margining carina; disc with a fairly well-defined basal triangular portion filled with carinae (about seven on each side) which diverge somewhat posteriorly, remainder of disc smooth and polished. Mesopleural callus convex, strongly polished; remainder of mesopleurum polished, weakly punctate. Middle tibiae with stiff, spinose setae; claws strongly dentate. Fore wing with discoidal cell fully outlined by weakly pigmented lines, subdiscoidal vein continued on as a faint brown streak nearly to wing margin, first recurrent vein also weakly indicated. Abdomen petiolate (Fig. 82). Subgenital plate truncate. Genitalia with the lateral elements very similar to those of *peruana* (Fig. 106), aedoeagus also resembling that species but with larger and differently shaped apical lobes (Fig. 111).⁸

Other males examined. — BRAZIL: 1, Santarem (no further data) [USNM].

Variation. — The Santarem specimen is smaller (LFW 4 mm.) but very similar in most respects. The propodeum has fewer carinae (about five on each side of the midline) and these do not diverge behind; the median carina reaches the transverse carina as a weak line. The clypeus is more strongly elevated medially, this elevation appearing angulate in profile. The ocelli are slightly smaller and farther removed from the eyes, OOL being fully 1.5 X WOT.

49. APENESIA PERUANA new name

Cleistopyris punctatus Kieffer, 1910, Ann. Soc. Ent. France, 79:48. [Type: ♂, PERU: Marcapata (Staudinger) (Berlin Museum, No. 196)]. Preoccupied by *Apenesia punctata* Kieffer, 1904 (♀, Africa). — Kieffer, 1914, Das Tierreich, 41: 493.

⁸ The description and figure of the genitalia are based on the Santarem specimen, the genitalia of the type not having been examined.

Description of type.—Length 7 mm.; LFW 4 mm. Head and thorax deep, shining black, abdomen piceous; mandibles yellowish, their apices rufous; scape and base of flagellum yellowish brown, remainder of flagellum dull brown; tegulae testaceous; legs, including coxae, entirely bright yellowish brown; wings completely hyaline, veins and stigma brown. Mandibles with five teeth in a strongly oblique series, the apical two teeth sharp, the others rounded; teeth more evenly spaced and equal in size than in the preceding three species (Fig. 116). Clypeus broadly subtruncate (very weakly arcuately concave) apically (as in *brasiliensis*, Fig. 103). Antennae with the first four segments in a ratio of about 30:8:17:16, segment three 2.8 times as long as thick, segment eleven 3.1 times as long as thick; pubescence of flagellum erect, bristling, the setulae on segment eleven about half as long as width of segment. Front, vertex and temples strongly polished, non-alutaceous, front with punctures small but strong, separated by 2-3 X their own diameters. Eyes converging below, WF .56 X WH, 1.12 X HE; ocelli small, in a small triangle the front angle of which is less than a right angle, OOL 1.55 X WOT. Vertex evenly rounded; distance from posterior ocelli to vertex crest slightly greater than width of ocellar triangle. Pronotum with a strong transverse carina anteriorly; disc strongly shining, with numerous small punctures. Mesoscutum polished, non-alutaceous, with scattered small punctures; notauli strong, nearly attaining posterior margin. Propodeum short, only slightly longer than wide, the disc 1.25 X as wide as long; lateral carinae strong, sublateral carinae absent; median carina strong, not quite reaching the transverse carina; disc also with about 14 additional, somewhat irregular carinae which diverge somewhat from the midline posteriorly, the more lateral ones the shorter; postero-lateral corners of propodeal disc smooth and polished; side pieces of propodeum completely smooth and polished, posterior face transversely striate. Mesopleurum shining, the callus convex and impunctate, remainder of mesopleurum weakly punctate. Fore wing with discoidal vein fairly distinct, the discoidal cell in fact outlined by weakly pigmented veins; first recurrent vein evident as a weakly pigmented streak. First abdominal segment short-petiolate. Subgenital plate truncate. Genitalia (Fig. 106) with the ventral arms of the digiti moderately wide, the aedoeagus slender, with two rather slender apical lobes.⁹

⁹ The genitalia described and figured are those of a specimen from Hacienda San Juan, Peru, those of the type not having been extracted.

Other males examined.—PERU: 3, Hacienda San Juan, Colonia del Perene, Junin, June 1920 (Cornell Univ. Exped.) [CU, MCZ]; 1, El Campamiento, Col. Perene, Junin, 21 June 1920 (Cornell Univ. Exped.) [CU].

Variation.—The available specimens show only a small range in size, LFW varying from 3.9 to 4.4 mm. OOL varies from 1.5 to 1.68 X WOT; other head measurements show almost no variation. There is some variation in propodeal sculpturing, and in all specimens but the type the median carina reaches the transverse carina.

NITIDA SPECIES-GROUP

This group of five closely related species is confined to tropical South America. The mandibles are unlike those of any other American species-group, the inner margin consisting of a blade-like edge which is at most slightly undulate, only the apical tooth being distinct (Fig. 117). The type of *Propristocera* Kieffer, from Ceylon, has mandibles of this type, but the abdomen is sessile and there are several other structural differences from *nitida* and its allies. Hence I doubt if the name *Propristocera* could properly be applied to this group in the event *Apenesia* were divided into subgenera.

Other characters of this group include a short, obtusely angulate clypeus with its apex simple or bidentate; the eyes not convergent below; front polished, non-alutaceous, with minute punctures; propodeal disc wider than long, posteriorly in considerable part polished; middle tibiae spinose; abdomen petiolate, subgenital plate broadly, arcuately emarginate (Fig. 126); parameres greatly expanded apically (Fig. 120); aedoeagus terminating in four slender lobes (Figs. 120-123). Characters of this species-group are illustrated in Plates 9 and 10, and tabulated in Table VII.

TABLE VII. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF NITIDA GROUP

Species	LFW (mm.)	WH/LH	WF/HE	OOL/WOT	Ant. 11 L/W	Flagellar pubescence	Margin clypeus
50. <i>nitida</i>	4.0	1.01	1.18	1.60	3.8	long	angulate
51. <i>paraensis</i>	4.2	1.00	1.10	1.30	3.4	long	bidentate
52. <i>truncaticeps</i>	4.0	1.00	1.30	1.40	3.2	medium	bidentate
53. <i>quadrata</i>	3.6	1.00	1.32	1.50	2.5	short	bidentate
54. <i>laticeps</i>	3.8	1.05	1.22	1.05	2.5	short	bidentate

50. APENESIA NITIDA (Kieffer) new combination

Cleistopyris nitidus Kieffer, 1910, Ann. Soc. Ent. France, 79: 49. [Type: ♂, PERU: Cosnipata-Ebene, 1000 meters, Dept. Cuzco, 3-12-1900 (Garlepp) (Berlin Museum, No. 197)]. — Kieffer, 1914, Das Tierreich, 41: 493.

Description of type. — Length 5.3 mm.; LFW 4.0 mm. Head and thorax shining black, abdomen dark reddish brown, sides of first tergite suffused with light brown; mandibles light castaneous except somewhat rufous basally and apically; antennae light castaneous except suffused with dull brownish toward the apex; tegulae testaceous; legs wholly bright yellowish brown, femora very slightly darker than rest of legs; wings hyaline, veins and stigma brown. Mandibles of the form typical of the species-group (Fig. 117). Clypeus moderately long and prominent, its sides approaching evenly to an obtuse median angulation (Fig. 125); median carina strong, weakly sloping in profile. First four antennal segments in a ratio of about 33:8:21:20, segment three 3 X as long as thick, segment eleven 3.8 X as long as thick; flagellar pubescence erect, bristling, that of segment eleven about .8 as long as width of segment. Front, vertex, and temples strongly polished, non-alutaceous, punctures minute and inconspicuous, separated by 5 or more X their own diameters. Head very slightly broader than high. Eyes slightly closer together in the middle than below; WF .59 X WH, 1.18 X HE; vertex rather evenly rounded off well above eye tops, distance from eye tops to vertex crest about .8 X HE; occipital carina complete, stronger than in *truncaticeps* and partially visible in full frontal view. Ocelli not enlarged, forming a compact triangle, front angle less than a right angle; OOL 1.60 X WOT. Pronotum as in *truncaticeps* except transverse carina a little weaker and located slightly further forward, part way down the oblique anterior face. Mesonotum polished and virtually impunctate; notauli complete; scutellum with well formed basal groove and lateral foveae. Propodeum slightly longer than wide, but the disc short, wider than long, disc with lateral margining carinae and with an arching transverse carina behind, median carina present but somewhat weakened behind; disc with weak and irregular reticulate sculpturing along the lateral carina and along the median carina, smooth and polished only in relatively narrow streaks on each side, the streaks widened and approaching medially behind. Mesopleurum polished, callus strong, subtended by a groove which anteriorly arches strongly

upward. Claws with a very small tooth. Wings not differing noticeably from those of *truncaticeps*. Abdomen with a strong petiole (as in Fig. 119). Subgenital plate arcuately concave apically (as in Fig. 126). Genitalia not studied.

Other males examined. — PERU, 1, same data as type [Berlin Museum].

Variation. — The second specimen is slightly larger (length 5.9 mm., LFW 4.2 mm.). OOL measures 1.45 X WOT. There are no other noticeable structural differences.

51. APENESIA PARAENSIS (Kieffer) new combination

Propristocera paraensis Kieffer, 1910, Ann. Soc. Ent. France, 78: 290-291.

[Type: ♂, BRAZIL: Pará (C. F. Baker) (Pomona College, Claremont, Calif.)]. — Kieffer, 1914, Das Tierreich, 41: 486.

Description of type. — Length 5.8 mm.; LFW 4.2 mm. Head black; thorax black except pronotal collar light reddish brown; abdomen dark brown, first tergite margined with light brown and other tergites indistinctly banded with light brown apically; mandibles yellowish brown except apical margin dark rufous; clypeus dark brown; antennae wholly light yellowish-brown except apical five segments gradually infuscated; tegulae pale testaceous; legs wholly bright straw-colored; wings hyaline, setulae dark, veins and stigma brown. Mandibles as in *truncaticeps* (Fig. 117). Clypeus short, rather flat, median carina weak, apex weakly bidentate (as in Fig. 124). Antennae elongate, first four segments in a ratio of about 36:10:17:17, segment three 3.4 X as long as thick, segment eleven also 3.4 X as long as thick although shorter and more slender than three; flagellar pubescence semierect, setulae of segment eleven about .8 as long as width of segment, flagellum also with some setulae which are completely erect and slightly longer than the semierect setulae, some of these erect setae actually slightly longer than the width of the segments bearing them (these erect setae are most noticeable on segments 3-8). Front shining, non-alutaceous, punctures small, separated by 3-5 X their own diameters; occipital carina complete though rather weak dorsally. Head rather broad, subquadrangular, about as wide as high, vertex somewhat squared off well above eye tops, distance from eye tops to vertex crest equal to about .75 X HE. Front of moderate width, inner orbits subparallel on lower two-thirds; WF .57 X WH, 1.10 X HE; ocelli rather small, DAO .17 X WF;

ocellar triangle compact, front angle less than a right angle, anterior ocellus touching a line drawn between eye-tops; OOL 1.3 X WOT. Pronotum with a strong carina margining the disc in front, surface of disc otherwise weakly convex except for a faint transverse depression well before the posterior margin; pronotum, like the mesonotum, strongly shining, non-alutaceous, and only obscurely punctate; notauli deep, diverging anteriorly, extending from posterior margin of mesoscutum nearly to anterior margin; basal groove and lateral foveae of scutellum rather deep. Propodeum short, about 1.2 X as long as wide, disc actually slightly wider than long; lateral and median carinae rather strong, the latter not quite reaching the transverse carina margining the disc behind, this carina moderately strong; basal median area of disc strongly reticulate, disc elsewhere smooth and polished, without sculpturing. Mesopleurum polished, non-alutaceous, weakly punctate, callus prominent. Claws strongly dentate. Fore wing with discoidal cell fully outlined by well pigmented lines, first recurrent vein faintly indicated; discoidal vein interstitial with media, transverse median vein weakly oblique, nearly straight. Abdomen with petiole about as in *truncaticeps* (Fig. 119). Subgenital plate (Fig. 126) broadly, arcuately emarginate apically. Genitalia (Fig. 120) with greatly expanded, bilobed parameres; aedoeagus moderately slender, minutely spinose median lobes.¹⁰

Other males examined. — BRAZIL: 1, Santarem (no further data) [USNM]; 1, Rio Branco, 1 April 1954 (M. Alvazanga) [Secr. Agri., Dept. Zool., São Paulo, Brazil]. VENEZUELA: 1, Barinitas (P. Anduze) [USNM].

Variation. — The other two Brazilian specimens are smaller than the type (LFW 3.3, 3.6 mm.) and have the median lobe of the clypeus truncate rather than bidentate (probably the result of wear). In these specimens OOL is 1.4-1.5 X WOT. In the Venezuela specimen LFW is 3.3 mm; WF 1.3 X HE, OOL 1.4 X WOT. In this specimen the antennae are somewhat infuseated beginning with segment five. The genitalia of this specimen differ in no noticeable way from those of the Santarem specimen. In both of these specimens, WH is about 1.03 X LH.

¹⁰ The description and sketch of the genitalia are based on the Santarem specimen. The genitalia of the type were not extracted, but the shape of the parameres agrees perfectly with the Santarem specimen.

52. APENESIA TRUNCATICEPS (Kieffer) new combination

Cleistepyris truncaticeps Kieffer, 1910, Ann. Soc. Ent. France, 79: 50 [Type: ♂, BOLIVIA: Mapiri (Staudinger) (Berlin Museum, no. 198)].

Cleistepyris punctaticeps Kieffer, 1914, Das Tierreich, 41: 494. [Error for *truncaticeps*.]

Propristocera boliviensis Ogloblin, 1938, An. Mus. Arg. Cien. Nat., 40: 44-46. [Type: BOLIVIA: ♂, Dept. Santa Cruz, Prov. Sara, Nov. 1916 (J. Steinbach) (Mus. Arg. Cien. Nat., no. 53.046)]. New synonymy.

Description of type.—Length 5.3 mm.; LFW 4.0 mm. Head and thorax shining black, abdomen dark reddish brown, paler basally and apically; mandibles castaneous; scape light castaneous, flagellum also of this color basally, but becoming gradually suffused with dull brown toward the apex; tegulae testaceous; legs wholly bright yellowish castaneous, spurs somewhat reddish; wings hyaline, stigma brown, veins light brown, Mandibles as in Figure 117. Clypeus rather short, its sides approaching evenly to an obtusely angulate apex which bears two weak teeth (Fig. 124); median carina low and rather ill-defined. First four antennal segments in a ratio of about 17:5:8:8, segment three about 3 X as long as thick, segment eleven about 3.2 X as long as thick; flagellar pubescence erect, bristling, setulae of segment eleven about .7 as long as width of segment. Front, vertex, and temples strongly polished, non-alutaceous, punctures minute and inconspicuous, separated by 5 or more X their own diameters. Head as wide as high; inner margins of eyes subparallel on their lower half; WF .62 X WH, 1.3 X HE; vertex broadly rounded off far above eye tops, distance from eye tops to vertex crest subequal to HE. Ocelli not enlarged, in a compact triangle, the front angle less than a right angle; OOL 1.4 X WOT. Occipital carina complete dorsally, though not visible in frontal view. Pronotum with some transverse rugae on the collar; anterior face oblique, smooth; disc with a transverse carina anteriorly, behind this with a low transverse welt, more noticeable on the sides; surface smooth, polished, non-alutaceous and with only minute punctures. Mesoscutum polished, notauli complete; scutellum polished, very weakly punctate, basal groove and lateral foveae well developed. Propodeum slightly longer than wide, but the disc actually wider than long; disc with complete lateral and median carinae and a complete carina margining the declivity, base with some short, irregular longitudinal carinae which disappear among some irregular transverse striations, sides and posterior third of median area smooth, shining,

and without sculpturing. Mesopleurum shining, non-alutaceous, callus convexly elevated, subtended by a groove which reaches the posterior margin. Claws with a well defined tooth. Fore wing with the discoidal vein arising at the junction of the basal and transverse median veins, well pigmented to about the length of the basal vein; subdiscoidal vein also somewhat pigmented, but outer side of discoidal cell very weakly pigmented. Abdomen distinctly petiolate (Fig. 119), rather broad apically, the subgenital plate broadly, arcuately emarginate (as in *paraensis*, Fig. 126). Genitalia with the parameres and volsellae virtually identical to those of *paraensis*, but the aedoeagus (Fig. 123) more parallel-sided and with much broader apical lobes.¹¹

Specimens examined. — BOLIVIA: 1 ♂, C. Esperanza, Beni, 1921-22 (W. M. Mann) [USNM]; 1 ♂, Huachi, Beni, Sept. 1921 (W. M. Mann) [USNM]; 1 ♂, Mapiri, Pando (Staudinger) [type, Berlin Mus.]; 1 ♂, Prov. Sara (=Gutiérrez), Dept. Santa Cruz, Nov. 1916 (Steinbach) [type of *boliviensis*, Mus. Arg. Sci. Nat.]; 1 ♂, Las Juntas, Chuquisaca, Dec. 1913 (Steinbach) [CM]. PERU: 1 ♂, Tingo Maria, Huanuco, 22 Jan. 1947, 2200 feet (J. C. Pallister) [AMNH].

Variation. — The available specimens show remarkable uniformity in sculpture, coloration, and body measurements. LFW varies from 3.2 to 4.0, WH/LH from 1.0 to 1.03, WF/HE from 1.16 to 1.33, OOL/WOT from 1.32 to 1.53.

53. APENESIA QUADRATA new species

Holotype. — ♂, BRAZIL: Diamantina, Minas Gerais, 14-18 Nov. 1919 (Cornell Univ. Exped.) [CU, No. 3881].

Description of type. — Length 4 mm.; LFW 3.6 mm. Body dark castaneous, shining, abdomen slightly paler than head and thorax, first tergite margined with light brown; mandibles yellowish brown, the apical margin rufous; basal three antennal segments yellowish brown, antennae gradually infuscated beginning with fourth segment, apical segments dark brown; tegulae testaceous; legs wholly bright yellowish brown, including coxae; wings hyaline, veins and stigma brown. Mandibles broad apically, edentate except for the apical tooth (as in Fig. 117). Clypeus very short and broad, bidentate medially, median

¹¹ I did not examine the genitalia of the types of either *truncaticeps* or *boliviensis*. This statement is based on a study of the specimens from C. Esperanza and Huachi, Bolivia, and from Tingo Maria, Peru; the drawing was made from the first-named specimen.

line polished but barely elevated (as in Fig. 124). First four antennal segments in a ratio of about 30:8:13:13, segment three about twice as long as thick, segment eleven 2.5 X as long as thick; flagellar pubescence of moderate length, longest setulae of segment eleven about half as long as width of segment; basal flagellar segments with numerous erect setae which stand well above the pubescence. Front polished, non-alutaceous, punctures minute, separated by 4-6 X their own diameters; occipital carina strong throughout, barely visible when head is viewed from front. LH equal to WH; distance from eye tops to vertex crest actually slightly greater than HE. Front broad, WF .63 X WH, 1.32 X HE; ocelli not enlarged, in a small triangle far removed from eyes; OOL 1.5 X WOT; anterior ocellus well above a line drawn between eye tops. Pronotum with a rather delicate transverse carina behind which the disc is broadly elevated until just before the posterior margin; disc strongly polished and with minute punctures. Mesonotum and mesopleura as in *paraensis*, polished and only very weakly punctate. Propodeum slightly longer than wide, but the disc slightly wider than long; basal triangle of disc filled with delicate carinae which diverge from the median line, median carina nearly reaching the transverse carina, which is very weak; greater part of disc strongly polished, declivity with weak transverse striations which are obsolescent on the sides; spiracles elongate, directed dorsad. Fore wing with discoidal and subdiscoidal veins weak, outer side of discoidal cell closed by a barely pigmented vein. Abdominal petiole rather short. Subgenital plate as figured for *paraensis* (Fig. 126). Genitalia with the lateral elements virtually identical to those of *paraensis*, the aedoeagus (Fig. 121) similar, but the median apical lobes as long as the very slender lateral lobes, apex also with a rather prominent series of pectinations on the dorsal side just below the median lobes.

Remarks. — This species is known only from the type.

54. APENESIA LATICEPS new species

Holotype. — ♂, BRAZIL: Lassance, Minas Gerais, 9-19 Nov. 1919 (Cornell Univ. Exped.) [CU, No. 3882].

Description of type. — Length 4.5 mm.; LFW 3.8 mm. Head and thorax piceous, abdomen dark castaneous except first tergite margined with light brown; mandibles yellowish brown, apical

margin rufous; antennae yellowish brown basally, beyond segment three slightly darkened to a dull, medium brown; tegulae testaceous; legs wholly bright yellowish brown; wings hyaline, veins and stigma brown. Mandibles of the usual form of the species-group (as in Fig. 117); clypeus short, bidentate medially (as in Fig. 124). First four antennal segments in a ratio of about 31:9:15:15, segment three 2.1 X as long as thick, segment eleven 2.5 X as long as thick; flagellar pubescence suberect, moderately long, setulae of segment eleven about half as long as width of segment; erect setae conspicuous on basal segments, standing well above the pubescence. Front shining, non-alutaceous, punctures small although somewhat larger and more abundant than in *paraensis* or *quadrata*, separated from one another by 2-4 X their own diameters. Occipital carina complete, visible at crest of vertex in full frontal view. Head broad, the eyes prominent and somewhat bulging; WH 1.05 X LH; distance from eye tops to vertex crest equal to about .8 X HE. Front of moderate breadth, WF .59 X WH, 1.22 X HE; ocelli slightly enlarged, DAO .18 X WF; anterior ocellus touching a line drawn between eye tops; OOL 1.05 X WOT. Pronotum with a strong, arching transverse carina, behind which the disc is weakly elevated, then depressed just before the posterior margin; disc polished, punctures weak and well separated. Mesoscutum polished, weakly punctate, notauli strong and complete. Propodeum 1.2 X as long as wide, the disc .9 as long as wide; median carina not quite reaching transverse carina, which is fairly strong; disc with irregular sculpturing on both sides of median carina, elsewhere polished. Fore wing with discoidal cell very weakly outlined by pigmented lines. Middle tibiae strongly spinose. Abdominal petiole rather short. Subgenital plate broadly emarginate, as figured for *paraensis* (Fig. 126). Genitalia with the parameres and volsellae essentially as figured for *paraensis* except that the parameres have a larger number of relatively weaker setae; aedoeagus (Fig. 122) with the lateral apical lobes more slender than in *paraensis*, nearly as slender as in *quadrata*, median dorsal portion with a series of pectinations as in *quadrata*, but the median apical lobes shorter than in that species.

Paratypes. — BRAZIL: 3 ♂♂, same data as type [CU, MCZ].

Variation. — The paratypes are all slightly larger than the type (LFW about 4 mm.), but they differ scarcely at all in

structure or standard measurements. In one specimen the antennae are very slightly longer, segment eleven measuring 2.8 X as long as thick.

FEMALE APENESIA

As noted in the introductory section, I have grouped together here the nine species known from females only and the one species (*parapolita*) known from both sexes. Under several of the females I have indicated to which species-group they may belong, but at this stage of our knowledge these are no more than rash surmises. Some of the important characters of the females are summarized in Table VIII and some are illustrated in Plate 10.

TABLE VIII. SUMMARY OF SOME CHARACTERS OF TYPE SPECIMENS OF FEMALE APENESIA

Species	LH+LT (mm.)	LH/WH	Scape L/W	L Flagellum/ L Scape	Propodeum L/Max W	Propodeum Max W/Min W	Clypeus
37. <i>parapolita</i>	1.43	1.30	2.8	3.2	2.40	1.32	produced
55. <i>paradoxa</i>	1.52	1.15	3.0	2.7	1.65	1.30	produced
56. <i>insolita</i>	1.30	1.37	2.5	3.2	2.40	1.25	truncate
57. <i>delicata</i>	1.28	1.26	2.8	2.7	2.10	1.70	truncate
58. <i>dominica</i>	1.68	1.15	3.4	2.2	2.20	1.50	truncate
59. <i>amoena</i>	2.40	1.15	2.3	2.0	1.90	1.80	emarginate
60. <i>substriata</i>	2.50	1.15	2.3	2.0	2.10	1.90	emarginate
61. <i>amazonica</i>	3.65	1.11	2.8	2.0	1.80	1.60	emarginate
62. <i>flavipes</i>	2.35	1.04	2.8	2.1	2.10	1.65	truncate
63. <i>chontalica</i>	2.70	1.00	2.9	2.0	1.95	1.55	truncate

37. APENESIA PARAPOLITA new name

Propristocera polita Evans, 1958, Proc. Ent. Soc. Wash., 59: 294-295. [Pre-occupied; see description of male on an earlier page (*brasiliensis* group)].

Plesiallotype. — ♀, MARYLAND: Bladensburg, 21 July, with *Ponera contracta* (? = *coarctata pennsylvanica*) [USNM].

Description of plesiallotype. — Length 2.5 mm.; LH 0.53 mm.; LT 0.9 mm. Entirely testaceous, including legs and antennae. Body covered sparsely with pale erect setae, legs and basal antennal segments also with short erect or semi-erect setae. Mandibles moderately broad, with four sharp teeth in an oblique series (Fig. 127). Clypeus with a prominent, somewhat trapezoidal median lobe, its apex weakly obtusely angulate; median line carinate. Head 1.30 X as long as wide, its sides gently arcuate so that the head is wider in the middle than elsewhere; vertex slightly concave in anterior view. Eyes very small,

nearly circular, with about five ill-defined facets; greatest diameter of eye only about .10 X distance between the eyes. Head wholly although weakly alutaceous, strongly shining; punctures large, separated by 2-3 X their own diameters except absent from a fairly wide median strip. Scape 2.8 X as long as thick, strongly curved but not much flattened; flagellum more than 3 X as long as scape, somewhat incrassate, antennal segment eleven much wider than long, about 1.3 X as wide as segment three. Pronotal disc about 1.4 X as long as wide, its anterior margin evenly rounded, its surface shining although more strongly alutaceous than front; punctures inconspicuous, largely absent medially. Mesonotum .7 as long as wide, weakly alutaceous, weakly punctate. Propodeum (Fig. 136) very long, 1.6 X as long as pronotal disc; propodeal length 2.4 X maximum width, maximum width 1.32 X minimum width, constriction thus weak, well forward, distance from midpoint of constriction to median anterior margin slightly less than width of constriction; propodeal formula 34:25:35; surface of propodeum shining, weakly alutaceous, with a few small punctures on the sides. Mesopleurum with its dorsal surface rounded onto its lateral surface. Middle tibiae with only about six spines, not counting those at apical margin. Abdomen elongate, shining, first segment with a very short petiole.

Other females examined. — Twelve, from the following localities: TENNESSEE: 1, Sinks Canyon, Blount Co., 22 Sept. 1959 (tree crotch, W. Suter) [MCZ]. GEORGIA: 1, Ft. Gordon, Richmond Co., 15 Nov. 1958 (under bark of pine tree stump in swamp, R. R. Snelling) [CDAS]; 1, Columbus, 20 Aug. 1948 (L. W. Cunningham) [INHS]. ALABAMA: 1, Alberta City, Tuscaloosa Co., 1 April 1949 (under bark of fallen pine, B. D. Valentine) [MCZ]. LOUISIANA: 1, Kisatchie Nat. For., near Clarence, 29 June 1950 (Christiansen) [MCZ]. ARKANSAS: 1, Washington Co., 16 Dec. 1941 (M. W. Sanderson) [INHS]. ILLINOIS: 2, Rockford, 3 April 1934 (in old log, T. Horrall) [INHS]; 1, Ware, 3 Feb. 1934 (log in woods, Frison & Mohr) [INHS]; 1, Eichorn, 2 Feb. 1934 (Frison & Mohr) [INHS]; 1, Ursa, 9 Aug. 1945 (debris in hollow sycamore, C. C. Hoff) [INHS]; 1, Antioch, 27 Oct. 1943 (tamarack bog, woody debris, Ross & Sanderson) [INHS].

Variation. — The twelve females listed above vary in size from 2.2 mm. (LH 0.50 mm., LT 0.82 mm.) in the specimen from

Ware, Ill., to 3 mm. (LH 0.63 mm., LT 1.05 mm.) in the specimen from Tuscaloosa Co., Ala. Body color varies from testaceous to rich castaneous, but the legs and antennae are testaceous throughout. LII/WH varies over the narrow range of 1.30-1.39, maximum/minimum width of propodeum over the narrow range of 1.2-1.4. There is somewhat greater variation in the length of the pronotum and propodeum as compared to the width; length/width of pronotal disc varies from 1.28 to 1.47, length/maximum width of propodeum from 2.18 to 2.50. The number of discernible eye facets varies from 3 to 7. None of this variation seems closely associated with geographic distribution.

Remarks.—It will be noted that females have been taken from Alabama and Louisiana north to Illinois, although no males are presently recorded from west of the Appalachians. Nevertheless, I consider this association of sexes a very probable one. Not only are the females of appropriate size for *parapolita*, but the shape of the clypeus and the abdominal petiole suggest the males of this species. The only other alternative would be to assume that the female of *parapolita* has not yet been discovered and to describe the above females as a new species in which the males have not yet been discovered. I have followed what seems to me the more logical and conservative alternative.

55. APENESIA PARADOXA new species

Holotype.—♀, PANAMA: Barro Colorado Island, Canal Zone, 10 March 1929 (S. W. Frost) [USNM, No. 66013].

Description of type.—Length 3 mm.; LH 0.62 mm.; LT 0.90 mm. Head piceous except somewhat paler along the middle and lower parts of the front; pronotum dark castaneous, almost piceous, except collar and sides light brown; mesonotum dark castaneous; mesopleurum piceous but with a yellowish spot behind; propodeum piceous except paler behind; abdomen bright yellowish brown; mandibles light brown, teeth rufous; clypeus and antennae testaceous; legs wholly bright testaceous. Mandibles relatively broad apically, with a sharp edge above; apex with four teeth, the third tooth very small (Fig. 128). Clypeus somewhat produced medially, its margin rounded, actually weakly subangulate; median carina strong, in profile straight, abruptly declivous just before the apex. Head 1.15 X as long as wide, its sides subparallel except weakly contracted anteriorly

and posteriorly; vertex nearly straight. Eyes pale, each consisting of a single facet which is several times the diameter of one of the head punctures. Head strongly shining, not alutaceous or striate, but with strong punctures which are approximately their own diameters apart, except absent along a narrow median strip. Scape about 3 X as long as thick, slightly curved and flattened; flagellum about 2.7 X length of scape, somewhat incrassate, segment eleven wider than long. Pronotal disc 1.2 X as long as its posterior width, surface of pronotum shining, barely alutaceous with strong punctures which are absent from the midline. Mesonotum .6 X as long as wide (not counting part before the transverse depression, i.e., the scutum proper, which is distinct in this specimen); surface impunctate, shining, barely alutaceous. Propodeum (Fig. 137) 1.65 X as long as its maximum width, maximum width 1.3 X minimum width; constriction very weak, far forward, distance from midpoint of constriction to midpoint of anterior margin of propodeum equal to less than half width of constriction; propodeal formula 20:18:23; spiracles fully dorsal in position; disc alutaceous, moderately shining, with punctures toward the sides. Mesopleurum with the dorsal surface rounded onto the lateral surface; sides alutaceous and with a few large punctures. Spines of middle tibiae strong, about 14 in number not counting those at extreme apex; hind tibiae with only weak hairs. Abdomen elongate, sessile.

Remarks. — This striking species is known only from the type.

56. *APENESIA INSOLITA* new species

Holotype. — ♀, TEXAS: Brownsville, South Texas Garden, 8 Dec. 1910 (taken beating) [INHS].

Description of type. — Estimated total length about 2.2 mm. (abdomen missing); LH 0.50 mm.; LT 0.80 mm. Head and thorax, including antennae and legs, testaceous; eyes fuscous. Head with short, pale, semi-erect setae, but setae of thorax very sparse, short, and inconspicuous. Mandibles slender, with two strong apical teeth and a vestigial third tooth on the inner margin somewhat back from the apex (Fig. 130). Clypeus broadly truncate, actually weakly angularly emarginate, midline keeled. Head 1.37 X as long as wide, its sides strongly arched, the head much wider in the middle than anteriorly or posteriorly; vertex straight across in full frontal view, occipital carina

clearly defined and visible for the full width of the vertex when head is viewed from in front. Eye with 14 convex, strongly defined facets; eye elliptical, its height .29 X distance between eyes. Head wholly, rather weakly alutaceous, strongly shining; punctures very shallow and inconspicuous. Scape 2.5 X as long as thick, gently curved but not strongly flattened; flagellum slightly more than 3 X as long as scape, slender, segment eleven only slightly wider than long and only very slightly wider than segment three. Pronotum rather narrow and transversely convex, disc about 1.5 X as long as its posterior width; mesonotum .8 as long as wide; surface of pro- and mesonota shining, very weakly alutaceous, obscurely punctate. Propodeum (Fig. 138) 2.4 as long as its maximum width, which is anterior to the spiracles, 3 X as long as its maximum width behind the spiracles; maximum width 1.25 X minimum width; maximum width behind spiracles slightly less than width at spiracles, the entire posterior two-thirds of propodeum essentially parallel sided except at extreme end; propodeal formula 14:12:11; surface of propodeum wholly alutaceous, moderately shining. Mesopleura strong dorsally, so that the thorax is much wider here than elsewhere; dorsal surface rounded into the broad lateral surface. Femora incrassate; middle femora only 1.6 X as long as thick; middle tibiae smooth, without spines even at apex. Abdomen missing.

Remarks.—I would not describe a unique specimen lacking an abdomen if it did not represent a most unusual species which forms an exception to several of the characters of the genus *Apensia*. I refer to the large eyes, the non-spinose middle tibiae, and the almost parallel-sided propodeum. Although no other American species are close to *insolita*, the species does appear closely related to *Scleroderma unicolor* Westwood (Morocco) and *S. seychellensis* Kieffer (Seychelle Islands). These species do not by any means belong to *Scleroderma*, but probably to *Parascleroderma* Kieffer, a genus represented by several species in southern Europe and in Africa (the type species of which I have not seen). No males are currently assignable to this complex, but I would expect from the strong mesopleura and the structure of the head of the females that the group belongs in the *Pristocerini*. It should be noted that non-spinose tibiae occur in many species of *Dissomphalus*, and the propodeum is essentially parallel sided in that genus. As a matter of fact, it seems possible that *insolita* may represent the

female sex of one of those species of *Apenesia* that stands very close to *Dissomphalus: dissomphaloides* or *denticulata*. I do not care to make any definite disposition of the name *Parascleroderma* at this time, but I do feel that it belongs in the *Pristocerini* and may represent only an aberrant species-group of *Apenesia*.

57. *APENESIA DELICATA* new species

Holotype.—♀, JAMAICA: Gordontown, 4 Feb. 1937 (Chapin and Blackwelder) [USNM, no. 66014].

Description of type.—Length 2.6 mm.; LH 0.51 mm.; LT 0.77 mm. Entire body straw-colored, shining; mandibles tipped with rufous; antennae and legs pale straw-colored except spines of middle tibiae somewhat rufous. Mandibles slender, with two strong teeth and a weakly defined third tooth (about as figured for *insolita*, Fig. 130). Clypeus broadly truncate, with a strong median carina which is produced slightly beyond the margin as a weak median tooth. Head 1.26 X as long as wide, its sides subparallel except convergent just before the vertex, which is straight. Eyes small, longer than wide, dark rimmed and each with only two grayish facets. Head strongly polished, non-alutaceous, punctures minute and scarcely visible. Scape about 2.8 X as long as thick, flagellum about 2.7 X length of scape, apical segments much wider than basal segments. Pronotal disc 1.12 X as long as its posterior width; disc shining, non-alutaceous, punctures barely visible. Mesonotum about half as long as wide, smooth and shining. Propodeum 2.1 X as long as its maximum width, maximum width 1.7 X minimum width; distance from midpoint of constriction to midpoint of anterior margin of propodeum subequal to minimum width; propodeal formula 28:19:32; disc shining, without punctures or surface sculpturing. Mesopleurum with a small dorsal surface which is rather abruptly rounded to the broad lateral surface. Spines of middle tibia strong; hind tibia with only weak hairs. Abdomen with an unusually long petiole, the length of the petiole .6 the length of the hind tibia.

Remarks.—This species is known only from the type. It resembles closely the several species which follow except for the long abdominal petiole.

58. *APENESIA DOMINICA* new species

Holotype.—♀, DOMINICA (LESSER ANTILLES): Roseau (F. Lutz) [MCZ, No. 30445].

Description of type.—Length 3.2 mm.; LH 0.68 mm.; LT 1.00 mm. Head and thorax pale castaneous, shining; mandibles straw-colored, the tips amber; antennae and legs straw-colored; abdomen pale castaneous, the segments indistinctly annulated with paler basally. Mandibles moderately wide, with three strong apical teeth and a very weakly indicated fourth tooth basad of these (Fig. 129). Clypeus weakly emarginate medially, with a high median carina which is declivous before the apical margin. Head 1.15 X as long as wide, its sides subparallel except rounded posteriorly, the vertex weakly rounded. Eyes rather small, longer than wide, each with several rather indistinct grayish facets (apparently about six). Head polished, very weakly alutaceous except along the median strip, which is smooth; punctures shallow and inconspicuous although numerous (except medially), separated for the most part by 2-3 times their own diameters. Scape slender, 3.4 X as long as thick, curved but not strongly flattened; flagellum slightly more than twice length of scape, apical segments much thicker than basal segments. Pronotal disc 1.1 X as long as its posterior width, weakly alutaceous although shining, punctures minute and inconspicuous. Mesonotum .57 X as long as wide, weakly alutaceous like the pronotum. Propodeum (Fig. 135) 2.2 X as long as its maximum width, maximum width 1.5 X minimum width; distance from midpoint of constriction to midpoint of anterior margin of propodeum .75 X minimum width; propodeal formula 20:13:20; disc shining, obscurely alutaceous, with a distinct linear median impression. Mesopleurum with a fairly prominent dorsal surface which is subangularly separated from the broad lateral surface. Spines of middle tibia strong, covering the entire upper surface; hind tibia with only weak hairs. Abdomen with a very short petiole, length of the petiole less than a third the length of the hind tibia.

Remarks.—This species is known only from the type.

59. APENESIA AMOENA new species

Holotype.—♀, COSTA RICA: Hamburg Farm, Santa Clara Prov., 28 May 1925 (under loose bark of recently cut down tree, F. Nevermann) [USNM, No. 66015].

Description of type.—Length 4.8 mm.; LH 0.95 mm.; LT 1.45 mm. Head and thorax light yellowish brown; antennae and mandibles also of this color except the latter rufous-tipped; legs

straw-colored except spines of middle tibia reddish; abdomen medium castaneous, contrasting to the much paler head and thorax. Mandibles slender, with two strong apical teeth (Fig. 133). Clypeus with a broad, arcuately V-shaped emargination, the margin with strong bristles; emargination not reaching the interantennal prominence. Head 1.15 X as long as wide, its sides subparallel except arcuately convergent posteriorly; vertex weakly concave in anterior view, occipital carina obsolescent. Eyes elongate-elliptical, dark, each with about eight small facets, eye height only about .15 X distance between eyes. Head shining, wholly covered with very fine longitudinal striations; punctures small, sparse, separated by 2-5 X their own diameters, somewhat more dense along midline of front than elsewhere. Scape 2.3 X as long as wide, distinctly flattened; flagellum only about twice as long as scape, apical segments only slightly thicker than basal segments. Pronotal disc 1.4 X as long as its posterior width, with a small median anterior notch; disc with fine striae like the front, but these obsolescent medially; punctures small, largely absent medially. Mesonotum about .7 as long as wide, smooth and polished. Propodeum 1.9 X as long as its maximum width, maximum width 1.8 X minimum width; distance from midpoint of constriction to midpoint of anterior margin equal to .8 width of constriction; propodeal formula 28:18:33; disc shining, very weakly alutaceous, with a few small, widely separated punctures. Dorsal surface of mesopleurum separated from broad lateral surface by a distinct ridge; lateral surface strongly alutaceous. Spines of middle tibia very strong. Abdomen with a very short petiole.

Paratype.—COSTA RICA: 1 ♀, same data as type [USNM].

Variation.—The single paratype is smaller than the type (LH .85 mm.; LT 1.30 mm.). This specimen lacks the abdomen, the front leg on the right side, and the middle and hind legs on the left side (in each case beyond the trochanters). LH is 1.17 X WH. Thoracic and propodeal measurements are the same as those presented for the type.

Remarks.—This species is very similar to *substriata* Kieffer, from Bolivia, differing chiefly in its more robust form and slightly different mandibles.

60. *APENESIA SUBSTRIATA* Kieffer

Apenesia substriata Kieffer, 1904, Ann. Mus. Genova, 41: 365. [Type: ♀, BOLIVIA: Rio Beni, 1891 (Balzan) (Mus. Civ. Stor. Nat. Genova)].

(Studied one of 5 cotypes).—Kieffer, 1914, Das Tierreich, 41: 395.

Description of cotype.—Length 5.1 mm.; LH 0.95 mm.; LT 1.55 mm. Head and thorax pale castaneous, almost straw-colored, abdomen dark castaneous, paler at the tip; mandibles and antennae pale castaneous except the former darker apically; legs straw-colored except the mid-tibial spines rufous. Mandibles slender, with two strong apical teeth and a small third tooth on the inner margin somewhat back from the apex (about as figured for *insolita*, Fig. 130). Clypeus with a strong, broadly V-shaped apical emargination, its median ridge rounded on top. Head 1.15 X as long as wide, its sides subparallel except roundly convergent posteriorly; vertex weakly concave in anterior view. Eyes of moderate size, somewhat darker than head, elliptical, each with eight facets. Head shining, wholly covered with very fine longitudinal striations; punctures small, sparse, rather irregularly distributed, somewhat closer along midline of front than elsewhere. Scape 2.3 X as long as wide, flattened; flagellum not much more than twice length of scape, not notably incrassate. Pronotal disc 1.5 X as long as wide, with a small median anterior notch, rather flat and with fine longitudinal striae much like the front; punctures sparse but fairly strong. Mesonotum .7 as long as wide, shining and with only very weak sculpturing and punctures. Propodeum 2.1 X as long as its maximum width, maximum width 1.9 X minimum width; constriction well forward, distance from midpoint of constriction to midpoint of anterior propodeal margin subequal to width of constriction; propodeal formula 27:16:30; disc of propodeum shining, weakly alutaceous, weakly punctate. Mesopleurum unusually flat, its vertical lateral surface separated from the smaller horizontal dorsal surface by a distinct ridge; side pieces shining though rather strongly alutaceous. Spines of middle tibiae very strong, about 18 in number not counting those at the apex; hind tibiae with only weak hairs. Abdomen elongate, subsessile, fusiform.

Remarks.—This species is known only from the type series. I am indebted to Dr. Delfa Guiglia for lending me a cotype for study.

61. APENESIA AMAZONICA Westwood

Apenesia amazonica Westwood, 1874, Thesaur. Ent. Oxoniensis, p. 171, pl. XXXI, fig. 12 [Type: ♀, BRAZIL: Amazonas (H. W. Bates) (HCOU)]. — Kieffer, 1914, Das Tierreich, 41: 395.

Description of type.—Length 7.5 mm.; LH 1.55 mm.; LT 2.1 mm. Head and thorax pale yellowish brown, abdomen dark castaneous, the segments indistinctly annulated with light brown apically; mandibles pale castaneous, black at apex; eyes blackish; antennae testaceous, flagellum dull, slightly darker than scape; legs wholly testaceous. Mandibles slender, with two strong apical teeth and a weak expansion of the inner margin far back from the apex (Fig. 131). Clypeus broad and short, with a broadly V-shaped apical emargination which is so deep that it reaches the rounded prominence between the antennal bases. Head 1.11 X as long as wide, its sides subparallel to just before the posterior margin, where they are arcuately convergent; vertex very weakly concave in anterior view, occipital carina obsolete. Eyes elongate-elliptical, with about 6-8 ill-defined facets. Front shining, covered with very fine, somewhat irregular longitudinal grooves; punctures small, separated by 3-5 X their own diameters except more crowded both medially and laterally; median line of front weakly depressed. Scape much flattened, 2.8 X as long as wide; flagellum about twice as long as scape, slender, not incrassate, segment eleven barely wider than long and barely wider than segment three. Pronotal disc 1.3 X as long as wide, with a median anterior notch and a very faint median impression on anterior half; punctures moderately strong, surface finely striate like the front. Mesonotum .65 X as long as wide, polished, obscurely alutaceous. Propodeum 1.8 X as long as its maximum width, maximum width 1.6 X minimum width; formula 21:15:24; distance from midpoint of constriction to anterior midpoint .67 X width at constriction; sides of disc, in front of spiracles, rather strongly ridged; surface of disc very weakly alutaceous, shining, punctures small, absent from midline but otherwise well distributed over surface. Mesopleurum with dorsal and lateral surfaces separated by a ridge, lateral surface rather flat, alutaceous. Middle tibiae with about 18 strong spines besides those at apex; front femora 2.2 X as long as wide. Abdomen very short-petiolate, fusiform.

Other females examined.—BRAZIL: 1, same data as type [HCOU]; 7, Ega (some labeled "Smith coll.") [BMNH]; 1,

Pará [BMNH]; 11, Benjamin Constant, Amazonas, 18-28 Sept. 1962 (K. Lenko) [Sec. Agri., São Paulo, Brazil].

Variation.—The available specimens show considerable variation in size (length 4.4-7.5 mm.). LH/WH varies from 1.08 to 1.19; propodeal length varies from 1.8 to 2.05 X maximum width, maximum width 1.57 to 1.88 X minimum width. The smaller specimens tend to have the abdomen unbanded, though there is much variation in this regard; the larger specimens, even the type, have the abdomen much less distinctly banded than shown in Westwood's figure.

Remarks.—This species and the two preceding species form a very closely-knit complex, possibly representing females of the *columbana* group.

62. APENESIA FLAVIPES Cameron

Apenesia flavipes Cameron, 1888, Biol. Centr.-Amer., Hymen. I, p. 449, pl. XIX, fig. 11. [Type: ♀, PANAMA: Volcan de Chiriqui, 2-3000 feet (G. C. Champion) (BMNH)]. — Kieffer, 1914, Das Tierreich, 41: 395.

Description of type.—Length 5 mm.; LH 0.90 mm.; LT 1.45 mm. Body entirely light yellowish brown, including legs and antennae. Mandibles slender, bidentate. Clypeus very broadly truncate, with a sharp median carina which is straight in profile. Head 1.04 X as long as wide, sides somewhat bulging, head widest about midway of its length; vertex straight across, occipital carina complete, rather delicate. Eyes elliptical, about 1.8 X as long as wide, each with about 10 indistinct facets covered by a single, flat lens. Front polished, non-alutaceous, with a small pit in the center; punctures minute, widely separated, barely visible. Scape 2.8 X as long as wide; flagellum slightly thickened toward apex, only slightly more than twice as long as scape. Pronotal disc 1.25 X as long as wide, anterior margin with a weak median notch, surface smooth, punctures weak and widely separated. Mesonotum .7 X as long as wide, smooth and obscurely punctate. Propodeum 2.1 X as long as its maximum width, maximum width 1.65 X maximum width; formula 30:19:32; distance from midpoint of constriction to anterior margin slightly less than width of constriction; disc smooth and polished, impunctate. Mesopleurum with dorsal surface rounding gradually to the sides, surface smooth and obscurely punctate. Middle tibiae strongly spinose.

Remarks.—This species is known only from the type. None of the characters cited by Cameron for separating this species

from *chontalica* are valid, and the only difference I can find is the slightly longer head (see further discussion under *chontalica*).

63. APENESIA CHONTALICA Westwood

Apenesia chontalica Westwood, 1881, Trans. Ent. Soc. London, 1881, p. 131, pl. 7, fig. 3. [Type: ♀, NICARAGUA: Chontales (HCOU)]. — Cameron, 1888, Biol. Centr.-Amer., Hymen. I, p. 448. — Kieffer, 1914, Das Tierreich, 41: 395.

Description of type.—Length 5 mm.; LH 1.0 mm.; LT 1.7 mm. Entire body rather uniformly light castaneous, shining; mandibles testaceous, darker apically; legs and antennae testaceous. Mandibles slender, bidentate, with a weak undulation on the inner margin (Fig. 132). Clypeus broadly, shallowly emarginate, its median line strongly elevated. Head 1.00 X as long as wide, sides very slightly arching, almost parallel except arcuately converging on posterior third; vertex straight across in anterior view, occipital carina complete, rather delicate. Eyes elliptical, not much darker than head, covered by a single smooth lens beneath which about six facets can barely be made out. Front strongly polished, very obscurely alutaceous, punctures small and sparse, separated by several times their own diameters. Scape 2.9 X as wide as long, distinctly flattened; flagellum about twice as long as scape, slender, only very slightly incrassate; segment eleven considerably wider than long, about 1.2 X as wide as segment three. Pronotal disc 1.3 X as long as wide, with a weak median notch anteriorly; surface polished, non-alutaceous, with a few weak punctures on sides. Mesonotum .65 X as long as wide, smooth and polished. Propodeum (Fig. 134) 1.95 X as long as its maximum width, maximum width 1.55 X minimum width; formula 32:23:36; distance from midpoint of constriction to midpoint of anterior margin .7 X width of constriction; disc strongly polished, non-alutaceous, with scattered weak punctures. Mesopleurum with dorsal surface rounded rather abruptly onto lateral surface, but with no evidence of a ridge at the junction. Middle tibiae with 14 strong spines besides those at the apex; front femora 2.1 X as long as wide. Abdomen subsessile.

Other females examined.—MEXICO: 3, in decayed log intercepted at Laredo, Texas, 20 Dec. 1940 [USNM]. GUATEMALA: 2, Livingston "4-5" (Barber & Schwarz) [MCZ]; 1, San Juan, Vera Paz (G. C. Champion) [BMNH]. COSTA

RICA: 1, Turrialba, 16 June 1949 (K. W. Cooper) [USNM].

Variation.—These specimens vary in length from 4.5 to 6.0 mm. LH varies from .97 to 1.03 X WH; the shorter-headed individuals are from Mexico, the two specimens with the longest heads from Guatemala and Costa Rica (suggesting a cline which might include the Panamanian *flavipes* as one extreme). There is considerable variation in propodeal shape, the length of the propodeum varying from 1.95 to 2.2 X its maximum width, the maximum width from 1.54 to 1.83 X minimum width. In some specimens the front and thoracic dorsum are slightly more evidently alutaceous than in others.

Remarks.—The most probable male of this species is *guatemalensis*, in the *pilicornis* group. It is possible that *pilicornis* is the male of *flavipes*, if in fact that species is distinct from *chontalica*.

LITERATURE CITED

EVANS, H. E.

- 1955. The North American species of *Dissomphalus* (Hymenoptera, Bethyridae). Proc. Ent. Soc. Wash., **56**: 288-309.
- 1958. The North and Central American species of *Propristocera* (Hymenoptera: Bethyridae). Proc. Ent. Soc. Wash., **59**: 289-296.
- 1961. A revision of the genus *Pseudisobrachium* in North and Central America (Hymenoptera, Bethyridae). Bull. Mus. Comp. Zool., **126**: 211-318.
- 1963. A revision of the genus *Pristocera* in the Americas. Bull. Mus. Comp. Zool., **129**: 241-290.

KIEFFER, J. J.

- 1914. Bethyridae. Genus *Apnesia* Westwood. Das Tierreich, **41**: 391-396.

MICHENER, C. D.

- 1944. Comparative external morphology, phylogeny, and a classification of the bees (Hymenoptera). Bull. Amer. Mus. Nat. Hist., **82**: 157-326.